Federation Proceedings

VOLUME 12 *March 1953* NUMBER 1, PART II

THIRTY-SEVENTH ANNUAL MEETING

CHICAGO, ILLINOIS, APRIL 6–10, 1953

General Information

Registration

REGISTRATION DESKS will be located in the Conrad Hilton Hotel and the Palmer House, and will open at 9:00 A.M. on Monday, April 6, remaining open until 10:00 P.M. on that day. Tuesday, Wednesday, Thursday and Friday, April 7–10, desks will be open from 8:00 A.M. to 5:00 P.M. Since scientific sessions begin at 9:00 A.M. on Tuesday, members are urged to complete registration on Monday if possible. The registration fee will be $5.00. *The official badge issued at the registration desks must be worn to secure admission to scientific sessions and other activities of the Federation.*

There will be separate registration desks for non-professional women guests.

Headquarters Hotels

The Conrad Hilton will be headquarters for the American Society of Biological Chemists, the American Society for Experimental Pathology, the American Institute of Nutrition and the American Association of Immunologists. The Palmer House will be headquarters for the American Physiological Society, and the Congress Hotel headquarters for the American Society for Pharmacology and Experimental Therapeutics.

Scientific Sessions

Scientific sessions of the six constituent Societies will be held in the Blackstone, Congress, Conrad Hilton and Palmer House Hotels, from 9:00 A.M. on Tuesday, April 7, to 4:00 P.M. on Friday, April 10. A chart showing the location of the session rooms and topics will be found on the double spread in the program. Motion pictures will be shown in the Gold Room at the Congress Hotel, Monday evening, April 6.

The Joint Session of the Federation will be held in the Grand Ballroom of the Conrad Hilton Hotel on Tuesday evening, April 7, at 8:30 P.M., with Dr. Vincent du Vigneaud, Chairman of the Federation Board, presiding. The topic this year is *Some Aspects of Light and Biology*.

A special session of the Federation presenting a report on the *Survey of Physiological Science* has been scheduled for Thursday evening, April 10, at 7:30 P.M., in the North Ballroom at the Conrad Hilton Hotel.

Copies of FEDERATION PROCEEDINGS, March 1953 (Part I, Abstracts, Part II, Program), will be on sale near the registration desks at the Conrad Hilton and the Palmer House. The abstracts are priced at $3.00 and the program at $1.00.

Federation Board and Society Council Meetings

Meetings of the Councils of the six constituent Societies and of the Federation Board, as well as those of other special committees and editorial boards, will begin on Sunday, April 5, continuing through Thursday, April 9. For a list of such meetings and locations, see program double spread.

Exhibits

Exhibits by publishers of biological books, manufacturers of scientific apparatus and equipment, research laboratories of industries, particularly in the chemical, pharmaceutical and food fields, and by members of the Federation and institutions, will be located in the main Exhibit Hall at the Conrad Hilton Hotel. A list of exhibitors, with brief descriptions of the displays, will be found in the program, beginning on page 571.

Our exhibits are carefully selected, are of very high quality and are designed by the exhibitors to make a scientific contribution to the meetings. It is believed you will find it well worth while to allow several hours during the week for visits to the exhibit section.

Inspection hours will be as follows: Monday, April 6, from 12:00 noon to 8:00 P.M., Tuesday, Wednesday and Thursday, April 7–9, from 8:45 A.M. to 5:30 P.M.

Placement Service

The office of the Placement Service at the Chicago meeting will be located immediately adjoining the Exhibition Hall in the lower lobby of the Conrad Hilton Hotel. The office will be open from 8:15 A.M. to 5:00 P.M. on Monday, Tuesday, Wednesday and Thursday, April 6–9, and from 8:15 A.M. to 1:00 P.M. on Friday, April 10.

Applicants are requested to register Monday or Tuesday, employers on Monday, Tuesday and Wednesday. Interviews will be scheduled Tuesday

to Friday during the hours when the office is open. Advance applications can be accepted at the Washington office of the Placement Service, 2101 Constitution Avenue, until March 23. Applicants who are already registered with the Service should notify the Washington office by March 23 if they anticipate using the facilities at Chicago.

Employers who wish to use the interview facilities at Chicago must be annual subscribers to the Placement Service Bulletin or to the single February list of candidates.

Offices

The Federation Office, the Exhibits Office and the Public Relations and Press Office are all located on the main floor of the Conrad Hilton Hotel adjacent to the Exhibition Hall.

Special Functions

Various special functions during the convention have been scheduled through the Federation Office. See double spread in the program. Tickets for lunches and dinners may be purchased at a special desk in the registration area at the Conrad Hilton.

Physiologists' Lounge

The Exhibition Hall of the Palmer House will be arranged as a lounge and conversation room, Tuesday through Friday, April 7–10. It is hoped that this will serve for a continuous "mixer" and as a comfortable place for those important extra-session personal communications that often must be conducted in corridors and foyers. The Palmer House has generously equipped their large Exhibition Hall for this use. A bar will be in operation on Tuesday, and this service will be continued if the demand is sufficient.

Members and guests of all the Federation Societies are cordially invited to use these facilities.

Ladies' Entertainment

A committee composed of Dr. Frances A. Hellebrandt, *Chairman*, Dr. Dorothy Hamre and Dr. A. H. Steinhaus is in charge of arrangements for the entertainment of women guests who are not attending the scientific sessions. Information in regard to the activities scheduled may be obtained from representatives of this committee, who will be available in the registration areas, or from the Federation Office.

Lost and Found

The various hotel managements will be requested to forward to the Federation Office in the Conrad Hilton Hotel any articles left in the session rooms at the close of each day. Owners of lost property should call at the Federation Office.

Past Meetings of the Federation in Chicago

December 28–30, 1920

This was a three-day meeting of the four Societies comprising the Federation at that time, with the Pathology Society as host and in charge of arrangements, and the Hotel Sherman as headquarters. At this, the eighth meeting since the organization of the Federation in 1913, 186 papers were presented in sessions at the University of Chicago. A Joint Session was held in conjunction with Section N of the American Association for the Advancement of Science.

March 26–29, 1930

The Physiology Society was host for this meeting of the Federation, which will be remembered by those attending because of the blizzard which disrupted travel and hampered attendance at the early sessions. Headquarters was at the Shoreland Hotel, and the scientific sessions, again held at the University of Chicago, presented 234 papers and 28 "demonstrations."

April 15–19, 1941

By the time of this meeting the Federation had increased its membership by the admission of the American Institute of Nutrition. Again the Pathology Society was host. Headquarters was the Stevens Hotel, and the scientific sessions were held there and in other downtown hotels. The expansion of the program can be judged from the fact that 412 papers were presented at the sessions of the Physiology Society alone; there were 30 "demonstrations," and a motion picture session had been added to the program. At this meeting the publication of FEDERATION PROCEEDINGS was authorized by the Executive Committee, and favorable action was recommended on the request of the American Association of Immunologists for admission to the Federation.

May 18–22, 1947

This, the most recent meeting of the Federation in Chicago, was the second meeting after a three-year lapse during the war. The number of constituent Societies had meantime been increased to six by the admission of the Immunologists. Nine hundred and nine papers and one motion picture session were scheduled during the five-day meeting, as well as five symposia. The Stevens was again headquarters hotel, with the scientific sessions in various hotels and the exhibits located at the University of Illinois College of Medicine.

Federation Program

JOINT SESSION OF THE FEDERATION

TUESDAY, APRIL 7, 8:30 P.M.—CONRAD HILTON HOTEL, GRAND BALLROOM

Chairman: Vincent du Vigneaud

TOPIC: SOME ASPECTS OF LIGHT AND BIOLOGY

Bioluminescence. E. NEWTON HARVEY. *Princeton University.*

Vision. GEORGE WALD. *Harvard University.*

Photosynthesis. DEAN BURK. *National Cancer Institute.*

SPECIAL SESSION OF THE FEDERATION

THURSDAY, APRIL 9, 7:30 P.M.—CONRAD HILTON HOTEL, NORTH BALLROOM

Chairman: R. W. Gerard

TOPIC: REPORT ON THE SURVEY OF PHYSIOLOGICAL SCIENCE

The Survey: orientation. R. W. GERARD. *University of Illinois.*

The Survey: operations and results. L. M. N. BACH. *Tulane University.*

Personality patterns of experimental biologists. ANNE ROE. *New York City.*

Physiology in education: undergraduate and graduate. ORR E. REYNOLDS. *Office of Naval Research.*

Physiology in education: professional schools. J. H. COMROE, JR. *University of Pennsylvania.*

MOTION PICTURES

MONDAY, APRIL 6, 8:30 P.M.—CONGRESS HOTEL, GOLD ROOM

Chairman: C. R. Treadwell

An asterisk * following an author's name indicates "by invitation."

125. Origin of heart sounds. H. E. ESSEX, H. L. SMITH* AND E. J. BALDES. *Mayo Clinic and Foundation, Rochester, Minn.*

254. Acoustic reflex of tympanic muscles. H. G. KOBRAK AND JOHN M. WHITEMAN.* *University of Chicago, Chicago, Ill.*

1312. Effect of plasma opsonin on phagocytosis. ABOU D. POLLACK (introduced by JOSEPH VICTOR). *Biological Laboratories, Chemical Corps, Camp Detrick, Md.*

355. Tissue culture technique for study of skeletal muscle contraction. C. M. POMERAT. *University of Texas, Medical Branch, Galveston.*

364. Mammalian ciliated respiratory epithelium: effects of menthol, nicotine and smoke from mentholated and non-mentholated cigarettes. N. RAKIETEN, M. L. RAKIETEN,* D. FELDMAN* AND M. J. BOYKIN.* *South Shore Analytical and Research Laboratory, Islip, N. Y.*

419. Behavioral changes following paleocortical injury in rodents, carnivores and primates. LEON SCHREINER AND ARTHUR KLING (introduced by A. V. WOLF). *Army Medical Service Graduate School, Washington, D. C.*

1204. Effect of drugs on thalamic reflex pattern in monkeys. R. PLATO SCHWARTZ* AND I. H. SLATER. *University of Rochester, Rochester, N. Y.*

528. Effect of adrenal insufficiency and experimental hypercorticalism on circulation in hamster cheek pouch. LELAND C. WYMAN, GEORGE P. FULTON AND MAURICE H. SHULMAN.* *Boston University, Boston, Mass.*

533. Mitotic aberrations produced by irradiating entire cells or parts of cells. RAYMOND E. ZIRKLE AND WILLIAM BLOOM. *University of Chicago, Chicago, Ill.*

THE AMERICAN PHYSIOLOGICAL SOCIETY

Seventy-first Meeting

Chicago, Illinois, April 6-10, 1953

Tuesday Morning, April 7, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Endocrine: Reproduction

TUESDAY, 9:00 A.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: G. Pincus

499. Basal body temperature curves and ovarian activity. GRACE E. WERTENBERGER AND MARY E. COLLETT. *Indiana Univ. School of Medicine and Western Reserve Univ.*

405. Priming the anestrous cat for reflex induction of ovulation. CHARLES H. SAWYER AND JOHN W. EVERETT. *Univ. of California, Univ. of California School of Medicine and VA Hosp., Los Angeles, and Duke Univ. School of Medicine.*

218. Competitive interaction of estrogens on uterine growth in rats. FREDERICK L. HISAW, JOSEPH T. VELARDO* AND CHARLES M. GOOLSBY.* *Harvard Univ.*

42. Effect of estrogens on lactic dehydrogenase-DPNH oxidase system of ovariectomized rats. ARLEY T. BEVER, JOSEPH T. VELARDO AND FREDERICK L. HISAW (intr. by JOHN H. WELSH). *Harvard Univ.*

301. Augmentation of chorionic gonadotrophin by human plasma; clinical applications. WILLIAM O. MADDOCK, ROBERT B. LEACH* AND ICHIRO TOKUYAMA.* *Wayne Univ. College of Med.*

342. Decidual development in intact and adrenalectomized rats. ALBERT G. OLSEN,* JOSEPH T. VELARDO* AND FREDERICK L. HISAW (intr. by E. S. CASTLE). *Brandeis Univ. and Harvard Univ.*

315. Inactivation of prolactin by pregnant and lactating rat mammary tissues. JOSEPH MEITES AND JAMES T. SGOURIS.* *Michigan State College.*

461. Influence of the liver upon estrogen-protein binding *in vitro*. CLARA M. SZEGO. *Univ. of California at Los Angeles.*

331. Serum progesterone levels in the pregnant rabbit. G. M. NEHER* AND M. X. ZARROW. *Purdue Univ.*

171. Effect of progesterone injections in males on alveolar carbon dioxide tension, basal body temperature and basal metabolism. RUTH L. GOODLAND,* JOHN G. REYNOLDS* AND W. T. POMMERENKE. *Univ. of Rochester School of Medicine.*

Neural: Olfaction, Hearing

TUESDAY, 9:00 A.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: R. Galambos

493. Some observations of electrical activity in the mammalian olfactory bulb. RAYMOND R. WALSH (intr. by D. R. GRIFFIN). *Cornell Univ.*

270. An objective method of determining deodorant capacity. L. L. LANGLEY AND H. S. POLIN.* *Univ. of Alabama School of Dentistry.*

465. Afferent impulses in individual cochlear nerve fibers of the guinea pig. I. TASAKI (intr. by H. DAVIS). *Central Inst. for Deaf.*

388. Electrical responses to clicks recorded from eighth-nerve locations in monkey. WALTER A. ROSENBLITH (intr. by S. S. STEVENS). *Massachusetts Inst. of Technology and Harvard Univ.*

150. Cortical localization of pure tone responses using a Laplacian electrode. ROBERT GALAMBOS, EDWARD R. PERL* AND JAMES U. CASBY.* *Army Med. Service Grad. School.*

358. Cortical action potentials evoked by acoustic

stimuli: I. Extent in monkey. KARL H. PRIBRAM. *Inst. of Living and Harvard Univ.*

391. Cortical action potentials evoked by acoustic stimuli: II. Intensity and frequency functions in monkey. BURTON S. ROSNER (intr. by J. C. R. LICKLIDER). *Yale and Harvard Univs.*

352. A study of the auditory cortex with a localizing electrode. EDWARD R. PERL AND JAMES U. CASBY (intr. by J. E. ROSE). *Army Med. Service Grad. School.*

101. Role of the auditory cortex in the discrimination of tonal patterns. IRVING T. DIAMOND* AND WILLIAM D. NEFF. *Univ. of Chicago.*

16. Musical memory-mechanisms. A. BACHEM. *Univ. of Illinois College of Medicine.*

Heart: Electrocardiogram

TUESDAY, 9:00 A.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: J. S. Robb

416. Radial sheet presentation of stereovector electrocardiographic data. OTTO H. SCHMITT. *Univ. of Minnesota.*

432. Effect of moderate and hard muscular work on spatial electrocardiogram. ERNST SIMONSON AND NOBORU KIMURA.* *Univ. of Minnesota.*

142. Theoretical analysis of the influence of heart-dipole eccentricity of limb leads, Wilson central-terminal voltage and the frontal-plane vectorcardiogram. ERNEST FRANK (intr. by RAYMOND PENNEYS). *Univ. of Pennsylvania.*

60. Accurate registration of vectorcardiograms from 2-dimensional models. DANIEL A. BRODY AND WILLIAM E. ROMANS (intr. by S. R. BRUESCH). *Univ. of Tennessee School of Medicine.*

413. Spread of electrical activity in the mammalian ventricle. ALLEN M. SCHER,* RICHARD R. PATON* AND ALLAN C. YOUNG. *Univ. of Washington School of Medicine.*

357. Body surface potential distribution of an intrathoracic dipole as related to tissue conductivity in electrocardiography. EDWARD R. POWSNER,* L. H. NAHUM AND ALEXANDER MAURO.* *Yale Univ. School of Medicine.*

1539. Potential field during the S-T segment. L. H. NAHUM, ALEXANDER MAURO, HERBERT LEVINE, D. GORDON ABRAHAMS (intr. by E. J. BOELL). *Yale Univ. School of Medicine.*

292. Electrocardiogram of the anesthetized dog. ELNA A. LOMBARD AND A. CALHOUN WITHAM (intr. by W. F. HAMILTON). *Med. College of Georgia.*

168. Phase shift in body tissues as it pertains to electrocardiography. JOHN GOLDSTEIN, CALVIN F. KAY AND HERMAN P. SCHWAN (intr. by HUGH MONTGOMERY). *Univ. of Pennsylvania.*

55. Membrane and action potential of single cardiac muscle fibers during ventricular fibrillation. ALLAN J. BRADY* AND HANS H. HECHT. *Univ. of Utah College of Medicine.*

Thermal Relations: Warmth

TUESDAY, 9 A.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: V. E. Hall

453. A thermistor radiometer for the measurement of skin temperature of small areas. ALICE M. STOLL (intr. by EUGENE F. DU BOIS). *Cornell Univ. Med. College.*

196. Rapid measurement of skin temperature during exposure to thermal radiation. JAMES D. HARDY. *Cornell Univ. Med. College.*

289. Measurement of thermal properties of human and animal tissues. MARTIN LIPKIN (intr. by RICHARD W. LAWTON). *Cornell Univ. Med. College.*

521. Heat received from sunlight through clothing materials. ALAN H. WOODCOCK AND RICHARD L. PRATT.* *QM Climatic Research Lab.*

29. Changes in body fluid compartments and sweat composition during acclimatization to heat. DAVID E. BASS, CHARLES R. KLEEMAN AND MURRAY QUINN (intr. by A. H. HEGNAUER). *QM Climatic Research Lab., and Boston Univ.*

349. Relations of hydration of the skin to re-penetration of water, sweating and evaporation. C. N. PEISS, W. C. RANDALL AND A. B. HERTZMAN. *St. Louis Univ. School of Medicine.*

365. Shifting patterns of evaporation from the skin surface during exposure to various thermal stresses. W. C. RANDALL, A. B. HERTZMAN AND C. N. PEISS. *St. Louis Univ. School of Medicine.*

286. Mechanism of thermal panting. P. K. LIM* AND F. S. GRODINS. *Northwestern Univ. Med. School.*

176. Evidence that changes in the blood plasma are responsible for developed refractoriness to bacterial pyrogens. RONALD GRANT. *Stanford Univ.*

152. Voluntary tolerance time as an index of strain of men under heat stress. H. W. GARREN* AND F. N. CRAIG. *Chemical Corps Med. Lab.*

126. Relationship between mouth, skin and arterial blood temperature. GERALD H. EURMAN* AND MILTON MENDLOWITZ. *Mt. Sinai Hosp.*

Respiration: Control

TUESDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 14

Chairman: W. S. Fowler

319. Interaction of respiratory drives. BERNARD METZ* AND THEODORE BERNTHAL. *Med. College of South Carolina.*

91. Studies on possible causes of Cheyne-Stokes breathing. JACK W. CROWELL,* ARTHUR C. GUYTON AND GEORGE G. ARMSTRONG.* *Univ. of Mississippi School of Medicine.*

264. Comparison of relationships of respiratory minute volume to arterial and internal jugular venous blood pCO_2 and pH during inhalation of low concentrations of carbon dioxide at 1 atmosphere and O_2 at 3.0 atmospheres. C. J. LAMBERTSEN,* R. H. KOUGH,* D. K. COOPER,* G. L. EMMEL,* H. H. LOESCHCKE* AND C. F. SCHMIDT. *Univ. of Pennsylvania.*

337. Analysis of transient respiratory response to CO_2 inhalation. A. L. NORINS,* K. R. SCHROEDER,* F. S. GRODINS, J. S. GRAY AND R. W. JONES.* *Northwestern Univ.*

457. Respiratory changes induced in the unanesthetized human by the inhalation of 30 per cent CO_2. MORRIS W. STROUD, 3RD, JAMES H. EWING AND CHARLES L. MACK (intr. by EDWARD LODHOLZ). *Univ. of Pennsylvania.*

140. Mechanical factors in breath holding. WARD S. FOWLER. *Mayo Clinic and Fndn.*

363. Changes in O_2 and CO_2 transport during pentobarbital anesthesia. H. RAHN AND M. SUSKIND.* *Univ. of Rochester School of Medicine.*

219. Observations on blood of dogs following the controlled breathing of air and oxygen. FRED A. HITCHCOCK, JULIET F. ATKINSON* AND JOHN P. KEMPH.* *Ohio State Univ.*

526. Maximum achievable oxygen uptake during physical exercise of 6 minutes' duration correlated with other measurements of respiratory function in normal and pathological subjects. GEORGE W. WRIGHT, FERNAND GREGOIRE* AND GILES F. FILLEY.* *Trudeau Fndn.*

503. Acceleration of thermal polypnea by hypocapnia. W. J. WHALEN* AND V. E. HALL. *Univ. of California at Los Angeles.*

Radiation Effects I

TUESDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 17

Chairman: A. Hollaender

1030. Radon inhalation studies in rats. S. H. COHN, R. K. SKOW AND J. K. GONG (intr. by H. R. BIERMAN). *Naval Radiological Defense Lab.* (Pharmacol.)

246. Effect of irradiation on DNA. LOLA KELLY AND ANITA PAYNE (intr. by H. B. JONES). *Univ. of California.*

136. 'Critical period' for post-irradiation protection by parabiosis. J. C. FINERTY, R. T. BINHAMMER,* J. K. BUTLER,* M. SCHNEIDER* AND C. R. WALKER.* *Univ. of Texas, Med. Branch.*

124. Species differences in plasma phospholipid levels as influenced by whole-body x-irradiation. CECIL ENTEMAN, R. A. NEVE AND CLINTON A. ALMSTEAD. (intr. by L. L. BENNETT). *Naval Radiological Defense Lab.*

82. Subcellular fractionation of mouse spleen radiation protection activity. LEONARD J. COLE, MAURICE C. FISHLER AND VICTOR P. BOND (intr. by J. M. D. OLMSTED). *Naval Radiological Defense Lab.*

277. Lipogenesis from acetate-1-C^{14} by liver slices from x-irradiated rats. SAMUEL R. LERNER, WILLIS L. WARNER AND CECIL ENTEMAN (intr. by I. L. CHAIKOFF). *Naval Radiological Defense Lab.*

11. Terminal phenomena associated with massive x-ray doses. HOWARD L. ANDREWS AND KIRKLAND C. BRACE (intr. by FALCONER SMITH). *Natl. Insts. of Health.*

324. Survival of excised skeletal muscle as affected by x-irradiation. WILLIAM B. MORGAN AND ERNEST H. BRUNQUIST (intr. by RICHARD W. WHITEHEAD). *Univ. of Colorado School of Medicine.*

1198. Reversal of protective action of cysteine against x-irradiation in rats by high oxygen tension. PAUL R. SALERNO AND HYMER L. FRIEDELL (intr. by LAWRENCE PETERS) *Western Reserve Univ.* (Pharmacol.)

165. Relationship between radiosensitivity and metabolic activity of tumors. ANNA GOLDFEDER AND FUSAY NAGASAKI.* *New York City Dept. of Hosps. and New York Univ.*

Blood Volume: Hemorrhage, Shock

TUESDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 18

Chairman: H. S. Mayerson

377. Variations in bovine plasma and blood volume during pregnancy and lactation. MONICA REYNOLDS (intr. by F. H. MCCUTCHEON). *Univ. of Pennsylvania.*

116. Tolerance to hemorrhage in the newborn animal. H. E. EDERSTROM. *Univ. of North Dakota School of Medicine and St. Louis Univ. School of Medicine.*

513. Visceral vasomotor tone and vascular reactivity in hemorrhagic shock. ARNOLD H. WILLIAMS, SIGMUND A. WESOLOWSKI AND ALBERT EINHEBER (intr. by ROBERT W. CLARKE). *Army Med. Service Grad. School.*

442. A controlled comparison of intra-arterial and intravenous transfusion; effect on arterial pressure and cardiac output in experimental hemorrhagic shock. CHEVES MCC. SMYTHE,* JAMES V. MALONEY, JR., JOSEPH P. GILMORE* AND STANLEY W. HANDFORD.* *Naval Med. Field Research Lab.*

72. Insufficient coronary flow and consequent myocardial failure as a contributing factor in

hemorrhagic shock. ROBERT B. CASE* AND STANLEY J. SARNOFF (intr. by WILLIAM H. FORBES). *Harvard School of Pub. Health.*

18. Influence of liver arterialization on hemorrhagic shock; relation to hepatic VDM (ferritin) mechanisms. SILVIO BAEZ, BENJAMIN W. ZWEIFACH AND EPHRAIM SHORR. *Cornell Univ. Med. College and New York Hosp.*

33. Effect of sympatholytic agents on course of severe hemorrhagic hypotension. L. BECK AND F. LOTZ (intr. by J. A. F. STEVENSON). *Univ. of Western Ontario.*

635. Labile phosphate, electrolyte and water shifts in the heart and the occluded and non-occluded limb during tourniquet shock in the rat. J. DENSON,* E. GRAY* AND H. JENSEN. *Army Med. Research Lab.* (Biochem.)

288. Further studies on mouse liver sulfhydryl and shock. WAYNE H. LINKENHEIMER* AND LYLE V. BECK. *Univ. of Pittsburgh School of Medicine.*

141. Some electrolyte and water shifts in the entire animal after burn shock. CHARLES L. FOX, JR., SIGMUND E. LASKER* AND JAMES M. WINFIELD.* *New York Med. College.*

310. Postburn survival of rats at 10 days following different i.v. infusions supplemented with cortone acetate, solubilized cortisone tricarballyate, ACTHAR, and percorten glucoside. MILES D. MCCARTHY, NANCY NEWLIN AND VIRGINIA BLACKBURN (intr. by J. E. RHOADS). *Univ. of Pennsylvania School of Medicine and Pomona College.*

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*
Members and guests of all Societies are cordially welcome.

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.
Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Tuesday Afternoon, April 7, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Neural: Vision and Central

TUESDAY, 1:15 P.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: T. C. Ruch

410. Effect of increased CO_2 concentrations on flicker fusion frequency and alpha blocking time. K. E. SCHAEFER AND CHARLES CAREY (intr. by E. S. MENDELSON). *Naval Med. Research Lab., New London.*

336. Further observations on origin of retinal potentials. WERNER K. NOELL. *USAF School of Aviation Medicine, Randolph Field.*

266. Effect of certain physiological determinants on CFF thresholds. CARNEY LANDIS. *New York State Psychiatric Inst.*

13. Eye movements during sleep. EUGENE ASERINSKY* AND NATHANIEL KLEITMAN. *Univ. of Chicago.*

43. Components of photomyoclonic response in man. REGINALD G. BICKFORD, PHILIP T. WHITE,* C. WILHELM SEM-JACOBSEN* AND ERNST A. RODIN.* *Mayo Clinic, and Fndn. and Rochester State Hosp.*

217. Two behavioral effects of atropine. HAROLD E. HIMWICH. *Galesburg State Research Hosp.*

450. Morphine on acquired behavior and inborn reflexes measured by visceral and motor responses. JOSEPH H. STEPHENS* AND W. HORSLEY GANTT. *Johns Hopkins Univ.*

448. Stimulation of reticular formation in intact unanesthetized and in decerebrated cats. JAMES M. SPRAGUE (intr. by L. B. FLEXNER). *Univ. of Pennsylvania.*

376. Structural basis of central reciprocal inhibition. ERNEST RETZLAFF* AND ROBERT GESELL. *Univ. of Michigan.*

Heart: Output

TUESDAY, 1:15 P.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: J. Starr

199. Dynamical description of the ballistocardiograph. W. K. HARRISON* AND S. A. TALBOT. *Johns Hopkins Med. School.*

466. Reliability of the low-frequency critically damped ballistocardiogram. HENRY LONGSTREET TAYLOR AND WILLIAM F. MALONEY.* *Univ. of Minnesota.*

428. Quantitative evaluation of the radiocardiogram. REGINALD A. SHIPLEY, RICHARD E. CLARK,* DANIEL LIEBOWITZ* AND JACK KROHMER.* *Crile Vet. Admin. Hosp., Cleveland, and Western Reserve Univ.*

395. Effect of exercise on the left ventricular diameter recorded from an intraventricular gauge. ROBERT F. RUSHMER, RICHARD M. ELLIS,* DEAN K. CRYSTAL* AND CLYDE WAGNER.* *Univ. of Washington.*

302. Arterial dilution curves of T-1824 during rest and exercise. HAROLD T. MANKIN AND H. J. C. SWAN (intr. by EDWARD J. BALDES). *Mayo Clinic and Fndn.*

412. Theoretical and experimental evaluation of the time-concentration curves obtained by the Hamilton Method. PER SCHAMBYE (intr. by MAGNUS I. GREGERSEN). *Royal Vet. College, Copenhagen, Denmark.*

212. Comparison of arterial dilution curves following central and peripheral injections of dye. PETER S. HETZEL AND H. J. C. SWAN (intr. by NORMAN M. KEITH). *Mayo Clinic and Fndn.*

109. Form of the dye curve for cardiac output determination. PHILIP DOW. *Med. College of Georgia.*

37. Role of ventricular work load, the pericardium and coronary flow in determining the relationship between left and right auricular pressures. ERIK BERGLUND, JAMES P. ISAACS AND STANLEY J. SARNOFF (intr. by JAN NYBOER). *Harvard School of Public Health.*

232. Acute cardiac tamponade studied by Starling curves. JAMES P. ISAACS,* ERIK BERGLUND* AND STANLEY J. SARNOFF. *Harvard School of Public Health.*

Thermal Relations: Cold Effects

TUESDAY, 1:15 P.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: E. A. Sellers

188. Relation of 24-hour rhythm in body temperature to lighting conditions and to the adrenal. F. HALBERG,* L. LEVY* AND M. B. VISSCHER. *Univ. of Minnesota.*

394. Hypothermia induced by blood refrigeration. C. H. WILLIAM RUHE AND RICHARD H. HORN.* *Univ. of Pittsburgh School of Medicine.*

96. Plasma magnesium changes during cold acclimatization in man. FARRINGTON DANIELS, JR., MURRAY QUINN, CHARLES R. KLEEMAN AND JEAN MARINO (intr. by AUSTIN HENSCHEL). *QM Climatic Research Lab. and QM Pioneering Research Lab.*

104. Blood sugar and energy relationships in the bat during dehibernation. CHARLES L. DODGEN* AND FRANK R. BLOOD. *Vanderbilt Univ. School of Medicine.*

208. Effect of denervation of thermal cutaneous receptors on rectal temperature response to limb immersion. ALLAN HEMINGWAY AND LYLE A. FRENCH.* *Univ. of California at Los Angeles and Univ. of Minnesota.*

66. Plasma lipoprotein changes after mild local cold injury. WILLIAM W. CALHOUN, LAWRENCE J. MILCH AND ROBERT F. REDMOND (intr. by H. M. SWEENEY). *USAF School of Aviation Medicine.*

325. Some physiological observations on a small shrew. PETER R. MORRISON, FRED A. RYSER* AND ALBERT R. DAWE.* *Univ. of Wisconsin.*

498. Adaptation of rats to cold air and its effect on tissue oxygen consumptions. A. KURT WEISS (intr. by E. F. ADOLPH). *Univ. of Rochester School of Medicine.*

20. Carbohydrate metabolism in the rat exposed to a low environmental temperature. D. G. BAKER* AND E. A. SELLERS. *Univ. of Toronto.*

69. Adaptation of caloric balance in rat exposed to cold. L. D. CARLSON AND WALTER COTTLE.* *Univ. of Washington School of Medicine.*

Excretion: Water and Electrolytes

TUESDAY, 1:15 P.M.—PALMER HOUSE, PRIVATE DINING ROOM 14

Chairman: A. V. Wolf

271. Effects of decrease in glomerular filtration rate on cation excretion during loading with non-reabsorbable anions. H. D. LAUSON AND D. D. THOMPSON. *Cornell Univ. Med. College.*

374. Na^{22} excretion by chicken kidney. B. RENNICK,* D. CALHOUN,* H. GANDIA* AND G. MOE. *State Univ. of New York Med. College at Syracuse.*

133. Effects of severe hypoxia upon plasma electrolytes and renal function in dogs. FREDERICK P. FERGUSON AND DIETRICH C. SMITH. *Univ. of Maryland School of Medicine.*

415. Effect of some environmental factors on renal function in the frog (*Rana catesbiana*). BODIL SCHMIDT-NIELSEN AND ROY P. FORSTER. *Duke Univ., Dartmouth College and Mt. Desert Isld. Biological Lab.*

120. Effects of acute respiratory acidosis on electrolyte excretion in man. J. R. ELKINTON, R. B. SINGER,* E. S. BARKER* AND J. K. CLARK.* *Univ. of Pennsylvania School of Medicine.*

106. Effects of acute respiratory acidosis on renal tubular absorption of bicarbonate. PHILIP J. DORMAN AND W. JAMES SULLIVAN (intr. by JOHN MACLEOD). *Cornell Univ. Med. College.*

59. Factors governing urine flow during acidosis in hydropenic dogs. WILLIAM A. BRODSKY, M. ELIZABETH AUSTING,* THOMAS I. MOXLEY,* CLARICE DRUTZ* AND HILDA SATRAN.* *Univ. of Louisville School of Medicine.*

98. Renal function, electrolyte balances and water exchanges in adrenalectomized-hypophysectomized dogs. JAMES O. DAVIS, DAVID S. HOWELL AND E. CONVERSE PEIRCE, 2ND. (intr. by ROGER K. MCDONALD). *Natl. Insts of Health and USPHS Hosp.*

449. Acute effects of constriction of renal arteries on renal sodium exchange in unanesthetized dogs. JEREMIAH STAMLER. *Michael Reese Hosp.*

45. Pathways of adrenalin action on renal function. WILLIAM D. BLAKE. *Univ. of Oregon Med. School.*

275. Diuretic action of sympathomimetic drugs in combination with dextrose and mercurial compounds. A. LEIMDORFER. *Loyola Univ.*

Radiation Effects II

TUESDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 17

Chairman: L. F. Nims

1506. Activation of pseudotuberculosis in mice exposed to sublethal total body radiation. I. L. SCHECHMEISTER AND F. L. ADLER.* *Washington Univ. School of Med.* (Immunol.).

392. Neurological and EFG changes in monkeys following x-irradiation of the head. J. ROSS, S. LEAVITT AND E. A. HOLST (intr. by W. A. SELLE). *Univ. of California School of Medicine and VA Hosp., Los Angeles.*

469. Hemin synthesis in polonium-induced anemia in the rat. ROBERT G. THOMAS,* KURT I. ALTMAN,* J. N. STANNARD AND KURT SALAMON.* *Univ. of Rochester School of Medicine.*

441. Spleen protection, leucopenia and resistance to infection in irradiated mice. WILLIE W. SMITH AND ROBERT Q. MARSTON.* *Natl. Insts. of Health.*

262. Treatment of some post-irradiation sequelae with protamine sulfate. HENRY G. KUPPER, J. B. PARKER AND R. MEADOR (intr. by ERNST G. HUF). *Med. College of Virginia.*

241. Testis weight loss induced by x-rays. ROBERT F. KALLMAN* AND HENRY I. KOHN. *Univ. of California Med. Center and Natl. Insts. of Health.*

239. Relationship between the number of post-irradiation exercise trials and lethality in animals exposed to roentgen rays. D. C. JONES, D. J. KIMELDORF AND T. J. CASTANERA (intr. by JONATHAN S. THATCHER). *Naval Radiological Defense Lab.*

225. New aspects of oxygen concentration effect in x-ray inactivation of bacterial suspensions. ALEXANDER HOLLAENDER AND G. E. STAPLETON.* *Oak Ridge Natl. Lab.*

161. Reversal of ultraviolet injury in Colpidium by visible light. ARTHUR C. GIESE (intr. by FREDERICK FUHRMAN). *Stanford Univ.*

1105. Relationship between tolerance to hypoxia and post-irradiation anorexia. D. J. KIMELDORF AND B. D. NEWSOM (intr. by RALPH W. BRAUER). *Naval Radiological Defense Lab.* (Pharmacol.)

Symposium: Communication in Biologic Organisms

TUESDAY, 1:15 P.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: E. J. Baldes

Participants: J. C. R. LICKLIDER, *Acoustics Lab., Massachusetts Inst. of Technology, Cambridge;* THEODORE H. BULLOCK, *Univ. of California, Los Angeles;* OTTO H. SCHMITT, *Univ. of Minnesota, Minneapolis.*

Biologic transducers
Comparative biophysics of biologic transducers
Biologic coding and handling of information
Application of communication theory to biologic systems

Physiology Society Business Meeting

TUESDAY, 4:00 P.M.—PALMER HOUSE, RED LACQUER ROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONRAD HILTON, GRAND BALLROOM

Program on page 477

Lost and Found Articles

Inquire at the Federation Office, Conrad Hilton Hotel.

Wednesday Morning, April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Endocrine: ACTH, Steroids

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: G. Sayers

318. Mechanism of suppression of inflammation by compound F. VALY MENKIN. *Temple Univ. School of Medicine.*

478. Biological assay of an anti-inflammatory agent produced by the spleen (splenin A). G. UNGAR AND S. A. KARJALA.* *Northwestern Univ. Med. School.*

516. Evaluation of adrenocortical activity and certain other physiologic processes in malnourished cancer patients. FRANK C. WILSON, JR.* AND JAMES D. HARDY. *Univ. of Tennessee Med. College.*

131. Steroids in adrenal venous blood of the dog. GORDON L. FARRELL (intr. by GEORGE SAYERS). *Western Reserve Univ.*

460. Adrenocortical steroids in human peripheral and adrenal venous blood as determined by fluorescence. MAX L. SWEAT, WILLIAM E. ABBOTT, WILLIAM MCK. JEFFRIES AND EUGENE L. BLISS (intr. by R. W. ECKSTEIN). *Univ. of Utah.*

155. Antagonists to cortisone: An ACTH-like action of steroids. ROBERT GAUNT, CONSTANCE H. TUTHILL,* NANCY ANTONCHAK* AND JAMES H. LEATHEM. *Ciba Pharmaceutical Products, Inc.*

211. Relation between adrenaline and cortisone in the production of eosinopenia in the adrenalectomized animal. W. L. HENRY, L. OLINER AND E. R. RAMEY (intr. by N. BREWER). *Michael Reese Hosp. and Univ. of Chicago.*

182. Effects of adrenal cortical steroids on C^{14}-glucose metabolism by rat diaphragm. MILTON S. GROSSMAN, CONSTANCE S. RYDER AND OLOF H. PEARSON (intr. by RULON W. RAWSON). *Sloan-Kettering Inst.*

145. Effects of adrenalectomy on protein catabolism. IRVING FRITZ (intr. by H. NECHELES). *Army Med. Service Grad. School.*

Neural: Autonomic; Metabolic

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: E. R. Loew

527. Regional or segmental variations in vasomotor activity. HARRY M. WRIGHT,* IRVIN M. KORR AND PRICE E. THOMAS.* *Kirksville College of Osteopathy and Surgery.*

468. Relation of sweat gland recruitment to ESR. PRICE E. THOMAS, HARRY M. WRIGHT AND C. WILLARD HART, JR. (intr. by J. S. DENSLOW). *Kirksville College of Osteopathy and Surgery.*

439. Paralysis of the vagus in the intact dog by thiamine. JAY A. SMITH, MELVIN POST,* HARRIET R. WEINSTEIN* AND PIERCE P. FOA. *Chicago Med. School.*

117. The action of anesthetics on glucose consumption of sympathetic ganglia. CHARLES EDWARDS* AND MARTIN G. LARRABEE. *Johns Hopkins Univ. and Hosp.*

89. Residual sympathetic activity in man following lumbar ganglionectomy. J. WILLIAM COX,* W. C. RANDALL, K. B. COLDWATER* AND A. B. HERTZMAN. *St. Louis Univ. School of Medicine and VA Hosp.*

92. Monomolecular films of brain substance. BYRON T. CURRIE* AND AMEDEO S. MARRAZZI. *Chemical Corps Med. Labs.*

456. Phosphorus turnover in phospholipid fractions of rat brain homogenates. E. STREICHER (intr. by A. J. CARLSON). *Univ. of Chicago.*

167. Postadrenalectomy cycles of motor activity and creatine phosphate in pituitary and hypothalamus of the rat. HAROLD GOLDMAN* AND L. G. ABOOD. *Univ. of Chicago and Univ. of Illinois.*

1. Electrical stimulation of brain mitochondria. L. G. ABOOD AND R. W. GERARD. *Univ. of Illinois.*

317. Effects of drugs on neuronal metabolism. I. Studies on Malononitrile; preliminary *in vitro* investigation. J. MENDELSON,* J. HUNT MENDELSON*, B. J. FAX* AND R. G. GRENELL. *Univ. of Maryland School of Medicine.*

185. Resting and action potentials of squid axons with internal ionic environment altered by microinjection. HARRY GRUNDFEST, MARIO ALTAMIRANO-ORREGO,* C.-Y. KAO* AND DAVID NACHMANSOHN. *Columbia Univ. College of P. & S.*

Heart: Excitability, Reflexes

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: H. D. Green

491. Ventricular fibrillation induced by ether or by electrical stimulation in hypothermic rats.

SHEPPARD M. WALKER. *Univ. of Louisville School of Medicine.*

372. Ventricular pressure changes as indicators of myocardial condition. J. W. REMINGTON AND R. A. HUGGINS. *Med. College of Georgia and Baylor Univ. College of Medicine.*

369. Factors influencing cardiac inhibition from compression of the carotid sinus. E. A. REED AND J. C. SCOTT. *Hahnemann Med. College.*

222. Effects of 1-epinephrine and 1-nor-epinephrine on cardiac excitability. BRIAN F. HOFFMAN,* ARTHUR A. SIEBENS AND CHANDLER McC. BROOKS. *State Univ. of New York Med. Center at New York.*

198. Prevention of epinephrine and nor-epinephrine induced ventricular tachycardia by regitine. A. SIDNEY HARRIS, ABDO BISTENI* AND JOHN C. BRIGHAM.* *Louisiana State Univ. School of Medicine.*

65. Rate of excitation of the endocardial ventricular myocardium. HOWARD B. BURCHELL AND RAYMOND D. PRUITT. *Mayo Clinic.*

68. Vagal inhibition of dog heart at different blood pH levels. GILBERT S. CAMPBELL,* FRANCIS J. HADDY* AND E. B. BROWN, JR. *Univ. of Minnesota.*

184. Influence of variations in sodium and potassium concentration of the external medium on the action of dibucaine (butyloxycinchoninic acid diethylenediamide HCl) on isolated rabbit auricles. LEONARD GRUMBACH AND JESSE C. STANLEY (intr. by A. M. LANDS). *Sterling-Winthrop Research Inst.*

304. Comparative actions of phosphates on the myocardium. JEAN M. MARSHALL (intr. by E. COWLES ANDRUS). *Johns Hopkins Univ. School of Medicine.*

Blood: Coagulation

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: L. B. Jaques

488. Preliminary observations with a new instrument for study of clotting and fibrinolysis. KURT VON KAULLA AND MURRAY WEINER (intr. by J. MURRAY STEELE). *Goldwater Mem. Hosp.*

164. Modifying effect of small amounts of thrombin on the coagulation of fibrinogen by ninhydrin. HELEN I. GLUECK, DORIS WHEELER AND CAROLYN BARNES (intr. by CHARLES K. WEICHERT). *Jewish Hospital Association and Univ. of Cincinnati.*

170. Thromboplastic potency of whole blood components. S. GOLLUB (intr. by J. O. CRIDER). *Albert Einstein Med. Center.*

224. Altered distribution of accelerators and inhibitors of blood coagulation after application of high centrifugal forces. R. R. HOLBURN,* R. T. CARROLL* AND L. M. TOCANTINS. *Jefferson Med. College.*

234. Metachromatic activity of urine following the injection of heparin. L. B. JAQUES, E. NAPKE* AND S. W. LEVY.* *Univ. of Saskatchewan.*

490. Anticoagulant properties of silicone (Dri-Film). JEROME M. WALDRON, KENNETH R. KNOX* AND GARFIELD G. DUNCAN.* *Jefferson Med. College and Pennsylvania Hosp.*

500. Experimental intravascular thrombosis induced by serum fractions containing serum prothrombin conversion accelerator (SPCA). STANFORD WESSLER (intr. by HERMAN L. BLUMGART). *Beth Israel Hosp. and Harvard Univ.*

406. Relationship of bioelectric phenomena to intravascular thrombus formation. PHILIP N. SAWYER AND JAMES W. PATE (intr. by E. HARDENBERGH). *Naval Med. Research Inst.*

534. Reversible morphological alterations of platelets under common laboratory conditions. MARJORIE B. ZUCKER. *New York Univ. College of Dentistry.*

347. Effects of splenectomy and epinephrine on blood platelet, eosinophil and marrow megakaryocyte counts of the albino rat. KENNETH OTTIS (intr. by R. M. MELAMPY). *Iowa State College.*

Respiration: Gas Exchanges

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 14

Chairman: J. H. Comroe, Jr.

351. Transpulmonary oxygen dissociation curve as a test of pulmonary reserve. JOHN F. PERKINS, JR., WILLIAM E. ADAMS,* ADOLFO FLORES* AND WILLIAM M. LEES.* *Univ. of Chicago and Municipal Tuberculosis Sanitarium.*

514. Effect of anti-induced pulmonary edema on the alveolar-arterial oxygen gradient in dogs. M. HENRY WILLIAMS, JR. (intr. by D. E. GREGG). *Army Med. Service Grad. School.*

408. Method for sampling and analyzing alveolar P_{CO_2}. GEORGE A. SAXTON, JR. (intr. by LEWIS DEXTER). *Harvard School of Public Health and Peter Bent Brigham Hosp.*

472. Effect of carbonic anhydrase inhibitor (Diamox) on respiratory gas transport. JOSEPH F. TOMASHEFSKI,* ROBERT T. CLARK, JR.* AND HERMAN I. CHINN. *USAF School of Aviation Medicine.*

70. Diffusion rates of sulphur hexafluoride. F. G. CARPENTER, S. M. TENNEY AND H. RAHN (intr. by HENRY A. BLAIR). *Univ. of Rochester School of Medicine.*

85. Effects of CO_2 induced hyperventilation upon alveolar-arterial pO_2 difference and functional respiratory dead space in normal men. D. Y.

COOPER, G. L. EMMEL, R. H. KOUGH AND C. J. LAMBERTSEN (intr. by D. M. AVIADO, JR.). *Univ. of Pennsylvania.*

27. Respiratory dead space for different gases. J. BARTELS,* W. A. BRISCOE,* D. V. BATES* AND R. E. FORSTER. *Univ. of Pennsylvania Grad. School of Medicine.*

387. Alveolar ventilation during shallow breathing. ALBERT ROOS AND BERNARD BERCU.* *Washington Univ. School of Medicine.*

32. Respiratory rate reduction, with insufflation of air or oxygen. A. A. BECHTEL (intr. by J. C. SCOTT). *Hahnemann Med. College.*

719. Micromanometric method for analysis of CO_2 content of plasma containing volatile anesthetic agents. DUNCAN A. HOLADAY AND MARIAGNES VEROSKY (intr. by I. B. Wilson). *Columbia Univ. and Presbyterian Hosp.* (Biochem.)

Metabolism: Basal; Fat

WEDNESDAY, 9 A.M.—PALMER HOUSE, DINING ROOM 17

Chairman: C. L. Gemmill

36. Relationship between basal metabolism, lean body weight and surface area. ALBERT R. BEHNKE. *Navy Submarine Base.*

579. Comparison of physical and metabolic estimates of 'active protoplasmic mass.' WILLIAM R. BEST, W. JAMES KUHL, JR. AND C. FRANK CONSOLAZIO (intr. by THEODORE E. FRIEDEMANN). *Army Med. Nutrition Lab.* (Biochem.)

63. Age and sex differences in man's fat content during maturity. JOSEPH BROZEK, KUNG PEI CHEN,* WALTER CARLSON* AND FLORENCE BRONCZYK.* *Univ. of Minnesota.*

434. Fat, water and lean tissue studies. WILLIAM E. SIRI (intr. by M. O. LEE). *Univ. of California.*

495. Measurement of body volume by air displacement. RALPH J. WEDGWOOD, JOHN R. BRECKENRIDGE AND RUSSELL W. NEWMAN (intr. by L. P. HERRINGTON). *QM Climatic Research Lab.*

354. Gross partition of fat among the tissues of the guinea pig. GROVER C. PITTS. *Univ. of Virginia School of Medicine.*

34. Thermogenic response to intravenous fat. G. H. BECKER* AND M. I. GROSSMAN. *Army Med. Nutrition Lab.*

226. 'Clearing' of synthetic fat emulsion by heparinized plasma. CHARLOTTE HOLLETT,* WALTER E. COLE* AND H. C. MENG. *Vanderbilt Univ. School of Medicine.*

447. Lipemia-increasing effect of protamine in dogs. JOHN J. SPITZER (intr. by ESTHER M. GREISHEIMER). *Florida State Univ.*

935. Lipogenesis of the intact diabetic rat. JOHN T. VAN BRUGGEN, TYRA T. HUTCHENS* AND PAUL YAMADA*. *Univ. of Oregon Med. School.* (Biochem.)

128. Fat composition and oxygen consumption of marrow from fed and starved rabbits. JOHN D. EVANS. *Temple Univ. School of Medicine.*

Erythrocytes

WEDNESDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 18

Chairman: A. K. Parpart

83. *In vitro* hemolysis of dog erythrocytes by methylene blue. II. J. F. COLLINS,* F. J. LEARY,* A. B. VIAPANDO* AND H. C. STRUCK. *Creighton Med. School.*

484. *In vitro* hemolysis of dog erythrocytes by methylene blue. III. A. B. VIAPANDO, F. J. LEARY AND J. F. COLLINS (intr. by JOHN FERGUSON). *Creighton Med. School.*

311. Effect of some flavones on hemolysis of erythrocytes. BARBARA C. MCIVOR,* D. F. BOHR AND J. F. RINEHART.* *Univ. of California Med. Center.*

19. Comparative study of erythrocytes metabolism. ALICE S. BAKER* AND F. R. HUNTER. *Florida State Univ.*

475. Potassium exchange in the red blood cells of the duck. D. C. TOSTESON AND J. S. ROBERTSON (intr. by R. C. DARLING). *Brookhaven Natl. Lab.*

144. Transport of potassium by dog erythrocytes. HOWARD S. FRAZIER,* ARTHUR SICULAR* AND A. K. SOLOMON. *Harvard Univ.*

1048. Effect of fluoride on potassium transfer in human erythrocytes *in vitro*. ROBERT E. ECKEL (intr. by GEORGE SAYERS). *Western Reserve Univ.* (Pharmacol.)

238. Effect of ATP and cations upon P^{32} uptake by erythrocytes. H. JONAS (intr. by C. L. GEMMILL). *Univ. of Virginia School of Medicine.*

274. Further characterization of the sugar-transfer system in the red cell membrane by the use of phloretin. PAUL G. LEFEVRE. *Univ. of Vermont and Atomic Energy Commission.*

44. Possible linkage between the gene for elliptical erythrocytes (ovalocytes) and the genes for various blood types. R. M. BIRD AND H. K. BAILEY.* *Univ. of Oklahoma.*

Wednesday Afternoon, April 8, 1:15 p.m.

An asterisk following an author's name indicates "by invitation."*
For complete insitutional connection and address, see abstract, Part I.

Endocrine: Adrenals

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: T. F. Dougherty

160. Excretion of water and electrolytes in hydrated rats treated with adrenal medullary hormones. F. A. GIERE* AND W. J. EVERSOLE. *Univ. of New Mexico.*

386. Urinary corticosteroid excretion patterns before and following adrenalectomy. LOUISE P. ROMANOFF* AND GREGORY PINCUS. *Worchester Fndn. for Exptl. Biology.*

272. Dietary protein effect in DCA maintained adrenalectomized rats on survival and organ protein. J. H. LEATHEM AND S. I. MAUER.* *Rutgers Univ.*

253. Nature of adrenal crisis in the *rhesus* monkey. E. KNOBIL,* F. G. HOFMANN* AND R. O. GREEP. *Harvard School of Dental Medicine and Med. School.*

221. Cardiac response to adrenalectomy of one parabiotic twin-rat. BERNHARD HOELSCHER (intr. by ULRICH C. LUFT). *USAF School of Aviation Medicine.*

334. Effect of hypophysectomy, DDD Treatment and surgical trauma on the oxygen consumption of the adrenal cortex. JOHN NICHOLS AND COURTLAND DAVIS, JR.* *Wake Forest College.*

829. Adrenal glycogen of the albino rat in various conditions. NANCY LEE NOBLE* AND EVANGELINE PAPAGEORGE. *Emory Univ. School of Medicine.* (Biochem.)

115. Anethole and adrenal cortical function. ABRAHAM EDELMANN. *Brookhaven National Lab.*

112. Adrenal influence upon liver lipid fractions, glycogen and electrolyte content in rats. ABRAHAM DURY. *Bradford Hosp.*

62. Influence of DDD (2,2-bisparadichlorophenyl-1,1-dichloroethane) on adrenal cortical function in the rat. J. H. U. BROWN. *Univ. of North Carolina School of Medicine.*

Neural: Brain Stem

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: D. P. C. Lloyd

333. Respiratory characteristics of pontile and medullary cats—responses to CO_2 inhalation. S. H. NGAI* AND S. C. WANG. *Columbia Univ. College of P. & S.*

291. Corticifugal projections to brain stem activating system. R. B. LIVINGSTON, R. HERNANDEZ-PEON* AND J. D. FRENCH.* *Univ. of California School of Medicine at Los Angeles and VA Hosp.*

321. Central projection of the vestibular system. WALTER A. MICKLE (intr. by G. CLINTON KNOWLTON). *Emory Univ.*

255. Influence of position in space on paleocerebellar inhibitory and facilitatory effects in cats. WERNER P. KOELLA (intr. by E. GELLHORN). *Univ. of Minnesota.*

75. Role of cerebellum in placing reactions of cat. W. W. CHAMBERS. *Univ. of Pennsylvania.*

71. Tremor and its relation to cerebellar dyskinesia in the primate. RAUL CARREA,* MALCOLM B. CARPENTER* AND FRED A. METTLER. *Columbia Univ. College of P. & S.*

15. Bulbar inhibition in the absence of direct nervous connections. L. M. N. BACH. *Tulane Univ. School of Medicine.*

12. Action of drugs and metabolic alterations on brain stem activating system. A. ARDUINI AND M. G. ARDUINI (intr. by H. W. MAGOUN). *Univ. of California School of Medicine at Los Angeles and VA Hosp.*

77. Convulsive threshold values to parenterally injected Metrazol in epileptic monkeys. JOSEPH G. CHUSID, LENORE M. KOPELOFF* AND NICHOLAS KOPELOFF.* *New York Psychiatric Inst.*

480. Spreading cortical convulsions and depressions. A. VAN HARREVELD AND J. S. STAMM.* *California Inst. of Technology.*

Heart: Pathological

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: H. C. Lawson

40. Effects of hypothermia on the coronary circulation. ROBERT M. BERNE AND ELIZABETH D. ARMSTRONG.* *Western Reserve Univ. School of Medicine.*

290. Effect of ectopic ventricular contractions on first heart sound. ROBERT C. LITTLE AND JAMES G. HILTON.* *Univ. of Tennessee.*

163. Mechanism of cardiac output increase in arteriovenous fistula. VINCENT V. GLAVIANO

(intr. by J. L. NICKERSON). *Columbia Univ. College of P. & S.*

496. Effect of auricular and ventricular tachycardias on cardiac output, coronary blood flow and arterial blood pressure. RENÉ WÉGRIA, CHARLES W. FRANK, HSUEH HWA WANG AND DONALD M. KANTER. *Columbia Univ. and Presbyterian Hosp.*

361. Beneficial effects of auricular fibrillation in mitral stenosis. MURRAY RABINOWITZ,* E. LAWSON MCDONALD* AND FLORENCE W. HAYNES. *Peter Bent Brigham Hosp. and Harvard Med. School.*

181. Metabolic studies on ammonium chloride acidosis in patients in congestive heart failure. J. GROSSMAN, R. E. WESTON, I. B. HANENSON, E. R. BORUN, H. A. GUERIN, T. D. ULLMANN, M. WOLFMAN AND L. LEITER (intr. by H. HAIMOVICI). *Montefiore Hosp.*

138. Effects of aortic insufficiency on coronary blood flow and cardiac oxygen consumption. E. L. FOLTZ, H. WENDEL* AND J. W. WEST.* *Univ. of Pennsylvania.*

278. Left atrial, pulmonary artery, pulmonary artery wedge and systemic pressures during mitral commissurotomy. RALPH LEV, DANIEL C. CONNOLLY, ROBERT G. TOMPKINS AND JOHN W. KIRKLIN (intr. by GEORGE A. HALLENBECK). *Mayo Clinic and Fndn.*

84. Pulmonary artery wedge pressures in mitral valve diseases; relationship to left atrial pressure. DANIEL C. CONNOLLY,* RALPH LEV,* JOHN W. KIRKLIN* AND EARL H. WOOD. *Mayo Clinic and Fndn.*

353. Influence of oral estrogens on cholesterol-induced coronary atherogenesis. RUTH PICK,* JEREMIAH STAMLER AND LOUIS N. KATZ. *Michael Reese Hosp.*

Respiration: Blood Flow, Lung Mechanics

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 14

Chairman: H. Rahn

282. Influence of ventilation on pulmonary vascular responses to hypoxia. BENJAMIN M. LEWIS, RICHARD GORLIN AND HECTOR E. J. HOUSSAY (intr. by GEORGE W. THORN). *Peter Bent Brigham Hosp. and Harvard Med. School.*

329. Pulmonary blood flow in unnarcotized dogs during acute hypoxia before and after sympathectomy. G. G. NAHAS, G. W. MATHER AND R. L. KITCHELL (intr. by G. E. FAHR). *Univ. of Minnesota.*

57. Effect of intermittent positive-negative pressure respiration on venous return. GERHARD A. BRECHER. *Western Reserve Univ. School of Medicine.*

180. Use of intermittent positive pressure breathing in patients with pulmonary edema. DAVID G. GREENE AND THEODORE H. NOEHREN (intr. by FRED R. GRIFFITH, JR.). *Univ. of Buffalo School of Medicine and Buffalo Gen. Hosp.*

265. Diffusion of oxygen across the sheep's placenta. HAROLD LAMPORT. *Yale Univ. School of Medicine.*

135. Effect of abnormal pulmonary dynamics on work of breathing. BENJAMIN G. FERRIS, JR. AND BERTRAND C. KRIETE.* *Harvard School of Public Health.*

110. Resistance to breathing measured by driving the chest at 6 cycles per second. ARTHUR B. DUBOIS (intr. by J. H. COMROE, JR.). *Univ. of Pennsylvania, Grad. School of Medicine.*

313. Hysteresis-like behavior of lungs and thorax. JERE MEAD, JAMES L. WHITTENBERGER AND E. P. RADFORD, JR.* *Harvard School of Public Health.*

362. Solution of problems in the mechanics of respiration by means of electrical analogues. EDWARD P. RADFORD, JR. (intr. by JAMES L. WHITTENBERGER). *Harvard School of Public Health.*

Metabolism: Absorption and Various

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 17

Chairman: J. O. Hutchens

346. Comparative absorption of amino acids from intestine. ALINE UNDERHILL ORTEN* AND CHARLES G. JOHNSTON. *Wayne Univ. College of Medicine.*

81. Net absorption of dietary nitrogen and carbohydrate in the absence of pancreatic juice. BENNETT J. COHEN* AND JOHN H. ANNEGERS. *Northwestern Univ. Med. School.*

384. Choline absorption in the dog. W. G. ROHSE AND G. W. SEARLE (intr. by W. W. TUTTLE). *State Univ. of Iowa College of Medicine.*

360. Comparison of protein and protein free diets on nitrogen, water and electrolyte metabolism during inadequate caloric intake and water restriction in man. MURRAY QUINN, CHARLES R. KLEEMAN AND DAVID E. BASS (intr. by EARL R. LOEW). *QM Climatic Research Lab.*

338. Age differences in time curves of recovery of metabolic processes following graded exercise. ARTHUR H. NORRIS,* JOSEPH A. FALZONE* AND NATHAN W. SHOCK. *Natl. Heart Inst. and Baltimore City Hosps.*

5. Lactate utilization and oxygen debt. NORMAN

R. ALPERT* AND WALTER S. ROOT. *Columbia Univ. College of P. & S.*

250. Relation of food to survival potential at high temperature of animals restricted isocalorically. R. F. KLINE AND H. C. DYME.* *Aero Med. Lab.*

162. Metabolic response of adult male rats to diethylstilbestrol as related to dietary protein. STANLEY R. GLASSER (intr. by JOE W. HOWLAND). *Rutgers Univ.*

494. Agewise differences in the urinary excretion of vitamin B_{12} following intramuscular administration. DONALD M. WATKIN, CALVIN A. LANG, NATHAN W. SHOCK AND BACON F. CHOW (intr. by ANNA M. BAETJER). *Natl. Heart Inst., Baltimore City Hosps., and Johns Hopkins School of Hygiene and Public Health.*

305. Metabolism of ethanol by rat tissues. E. J. MASORO AND HENRY ABRAMOVITCH (intr. by G. H. ETTINGER). *Queen's Univ.*

1040. Inhibition of glucose uptake and of respiration of rat diaphragm by mercury. D. J. DEMIS (intr. by A. ROTHSTEIN). *Univ. of Rochester School of Medicine.* (*Pharmacol.*)

Panel Discussion: Hemorrhagic Aspects of Radiation Injury

WEDNESDAY, 1:15 P.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: John H. Ferguson

Participants: J. GARROTT ALLEN, *Dept. of Surgery, Univ. of Chicago, Chicago, Ill.*; JOHN B. FIELD, *Dept. of Medicine, Univ. of Southern California, Los Angeles*; GEORGE P. FULTON, *Dept. of Biology, Boston Univ., Boston, Mass.*; JACOB FURTH,* *Biology Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.*; DUDLEY P. JACKSON,* *Johns Hopkins Hosp., Baltimore, Md.*; GEORGE J. JACOBS,* *Naval Med. Research Inst., Bethesda, Md.*; HERMANN LISCO,* *Argonne Natl. Lab., Chicago, Ill.*; EGON LORENZ,* *Lab. of Biophysics, Natl. Cancer Inst., Bethesda, Md.*; FRANK C. MONKHOUSE,* *Dept. of Physiology, Univ. of Toronto, Toronto, Canada*; ROBERT L. ROSENTHAL,* *Naval Radiological Defense Lab., San Francisco, Calif.*; LEANDRO M. TOCANTINS, *Dept. of Medicine, Jefferson Med. College, Philadelphia, Pa.*

Special Functions

Tickets for group breakfasts, luncheons and dinners, Society dinners, the Biochemistry-Nutrition Smoker, and the events arranged by the Ladies Entertainment Committee, are on sale at the ticket desk, registration area, Conrad Hilton Hotel.

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Endocrine: Thyroid

THURSDAY, 9:00 A.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: D. Rapport

193. Peripheral utilization of thyroid hormone. MILTON W. HAMOLSKY,* GEORGE S. KURLAND* AND A. STONE FREEDBERG. *Beth Israel Hosp. and Harvard Univ.*

46. Effects of adrenalectomy and dietary NaCl upon thyroid I^{131} concentration in the rat. JOSEPH B. BOATMAN,* JOSEPH H. SUNDER,* CLEM RUSS,* ROBERT D. COLE* AND CAMPBELL MOSES. *Univ. of Pittsburgh School of Medicine.*

139. Effects of sulfhydril compounds on formation of tissue-bound radioactive iodide in thyroid, adrenal and pituitary glands. WILLIAM C. FOSTER, A. W. WASE* AND EVELYN E. REPPLINGER.* *Hahnemann Med. College.*

251. I^{131} excretion in bile and urine following injection of I^{131}-labeled thyroxine in euthyroid, hypo- and hyperthyroid rats. H. M. KLITGAARD (intr. by J. D. THOMSON). *State Univ. of Iowa.*

371. Cyclic variations in thyroid function of female rats. E. P. REINEKE AND F. A. SOLIMAN.* *Michigan State College.*

348. Thyroid and pituitary function in the guinea pig after release from propylthiouracil inhibition. K. E. PASCHKIS, S. A. D'ANGELO, A. CANTAROW, F. W. SUNDERMAN* AND G. FRIEDLER.* *Jefferson Med. College.*

24. Etiology and treatment of lowered resistance to upper respiratory infections. BRODA O. BARNES. *Univ. of Denver.*

947. Thyroid activity and nitrogen metabolism in relation to deep thermal burns in rat. ARTHUR W. WASE,* HERBERT J. EICHEL,* EVELYN REPPLINGER,* JAY S. ROTH* AND M. JOHN BOYD. *Hahneman Med. College.* (*Biochem.*)

1007. Deposition of Mn in the thyroid using $Mn^{52\text{-}54}$. H. D. BRUNER, JESSE D. PERKINSON, JR.* AND RAYMOND L. HAYES.* *Oak Ridge Natl. Inst.* (Pharmacol.)

1067. Absorption spectrum of a thyroxine-copper complex. CHALMERS L. GEMMILL. *Univ. of Virginia* (Pharmacol.)

Neural: Cerebrum

THURSDAY, 9:00 A.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: R. G. Grenell

506. Pyramidal discharges during sleep and wakefulness. D. G. WHITLOCK, A. ARDUINI AND G. MORUZZI (intr. by V. B. MOUNTCASTLE). *University of Pisa.*

411. Effects of d-amphetamine on the electroencephalogram of the dog. WILLIAM SCHALLEK AND DONALD WALZ.* *Hoffmann-La Roche, Inc.*

285. Significance of motor maps of the sensorimotor cortex in the conscious monkey. JOHN C. LILLY. *Univ. of Pennsylvania.*

209. Connections between the septal region and frontal cortex in the *macaque*. CHARLES D. HENDLEY, ROBERT G. HEATH* AND ROBERT HODES. *Tulane Univ. School of Medicine.*

276. Sensory and motor localization in cerebral cortex of the porcupine. R. A. LENDE* AND C. N. WOOLSEY. *Univ. of Wisconsin Med. School.*

8. Single cortical unit analysis of afferent activation of the cortex. VAHE E. AMASSIAN (intr. by A. A. WARD, JR.). *Univ. of Washington School of Medicine.*

236. Microelectrode studies of 'spontaneous' and evoked potentials of cerebral cortex. HERBERT JASPER AND CHOH-LUH LI.* *Montreal Neurological Inst.*

179. Pathways in rhinencephalic seizures. J. D. GREEN AND T. SHIMAMOTO (intr. by R. R. SONNENSCHEIN). *Univ. of California at Los Angeles and VA Hosp.*

192. Defects in biological intelligence associated with frontal lobe lesions in man. WARD C. HALSTEAD. *Univ. of Chicago.*

100. Effect of intelligent behavior of stimulation or destruction of pathways in the frontal lobe of monkeys. JOSE M. R. DELGADO AND H. ENGER ROSVOLD.* *Yale Univ. School of Medicine.*

Circulation: Hypertension

THURSDAY, 9:00 A.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: E. Ogden

501. Effects of renal hypertension on cardiac dynamics and cardiac metabolism in the dog.

J. W. West, H. Wendel and E. L. Foltz (intr. by A. N. Richards). *Univ. of Pennsylvania.*

430. Differentiation of VEM from renin-hypertensin on basis of action on capillary bed. Ephraim Shorr and Silvio Baez. *Cornell Univ. Med. College and New York Hosp.*

105. Pressor effects of TEA and hexamethonium in man after partial ganglionic blockade. A. S. Dontas* and S. W. Hoobler. *Univ. of Michigan Med. School.*

328. Effect of hexamethonium bromide (C-6) on cardiovascular system in normotensive and hypertensive dogs. Q. R. Murphy, G. S. O'Brien,* D. W. Rennie,* R. T. Capps,* G. G. Rowe* and C. W. Crumpton.* *Univ. of Wisconsin.*

306. 'Eclamptogenic' effect of renin in cortisone-treated rats. G. M. C. Masson, F. del Greco,* A. C. Corcoran and I. H. Page. *Cleveland Clinic Fndn.*

261. Treatment of experimental renal hypertension in dogs with antirenin. I. Kuperman* and G. E. Wakerlin. *Univ. of Illinois College of Medicine.*

228. Effect of state of hydration on hypertension in dogs living a month or longer without kidneys. C. Riley Houck. *Univ. of Tennessee.*

202. Production of experimental renal hypertension in dogs by reduction of renal artery pulse pressure without altering mean pressure. E. W. Hawthorne, Sheridan L. C. Perry and W. G. Pogue (intr. by J. L. Johnson). *Howard Univ.*

190. Effect of separation on blood pressure of spontaneously hypertensive parabiotic rats. C. E. Hall and O. Hall.* *Univ.of Texas Med. Branch.*

178. Salt exchange in renal hypertension. D. M. Green, F. M. Sturtevant* and C. G. Van Arman.* *G. D. Searle & Co.*

172. Production of antirenin in the rat. Howard C. Goodman, Stephen Smith, Alvin Sellers and Jessie Marmorston (intr. by Harry Goldblatt). *Cedars of Lebanon Hosp.*

Respiration: Aviation, High Pressure

Thursday, 9:00 a.m.—Palmer House, Crystal Room

Chairman: F. G. Hall

189. Observations on men exposed to hypoxia at different environmental temperatures. Henry B. Hale (intr. by Otis O. Benson, Jr.). *USAF School of Aviation Medicine.*

191. Carbon dioxide and the regulation of breathing at altitude. F. G. Hall. *Duke Univ. School of Medicine.*

93. Factors affecting volume and chemical composition of flatus in man with altitude. I. E. Danhof* and F. R. Steggerda. *Univ. of Illinois.*

114. Hydrostatic behavior of the vascular column during tumbling. R. Edelberg, H. S. Weiss and P. V. Charland (intr. by J. W. Wilson). *Wright-Patterson AFB.*

7. Effect of 9-methyl pteroylglutamic acid on rats exposed repeatedly to simulated altitude. Paul D. Altland and Benjamin Highman.* *Natl. Insts. of Health.*

505. Influence of low oxygen tensions on respiration of tissues of acclimatized rats. W. V. Whitehorn, W. C. Ullrick,* J. G. Krone* and Betsy B. Brennan.* *Univ. of Illinois College of Medicine.*

247. Blood sugar and absolute eosinophile response in the rat to 30 per cent CO_2 in air and in oxygen. C. T. G. King, J. L. Mego, E. E. Williams and K. E. Shaefer (intr. by C. P. Lyman). *Naval Med. Research Lab.*

350. A possible metabolic factor in oxygen toxicity. Kenneth E. Penrod. *Duke Univ. School of Medicine.*

31. Effects of thyroid and of insulin on pulmonary reaction to oxygen. John W. Bean, Paul Johnson,* Charles Smith* and Robert Bauer.* *Univ. of Michigan.*

825. Relationship between iron content, color density, percentage of red cells and oxygen combining capacity in blood of normal adults and infants. Samuel Natelson and Carol Menning.* *Rockford Memorial Hosp.* (Biochem.)

Body Fluids

Thursday, 9:00 a.m.—Palmer House, Dining Room 14

Chairman: R. R. Overman

229. Freezing points of blood and environing fluids of chick embryo at various developmental stages. Evelyn Howard. *Johns Hopkins Univ. School of Medicine.*

367. Alternative explanation of synovial potentials. C. I. Reed and William J. Day.* *Univ. of Illinois.*

404. Factors affecting renal excretion of sodium and water in salt loaded rats. Leo A. Sapirstein, Robert W. Greene,* William S. Weil* and Marcia R. Herrold.* *Ohio State Univ.*

517. Variable tolerance of diabetes insipidus dogs to water restriction. D. M. Witt,* A. D. Keller, H. L. Batsel* and J. R. Lynch.* *Army Med. Research Lab.*

464. Changes in serum solutes following intravenous injection of hypertonic saline to normal subjects. Robert Tarail and George Logs-

DON (intr. by T. S. DANOWSKI). *Univ. of Pittsburgh.*

341. Urea elimination under high water loads. ERIC OGDEN AND MARIANNE MOORE.* *Ohio State Univ.*

273. Renal and hepatic excretion of cobalt 60. CHENG-CHUN LEE (intr. by W. D. COLLINGS). *Michigan State College.*

197. Volume of distribution of and renal clearance of sodium ferrocyanide. KENDRICK HARE, RUTH S. HARE,* H. RAY STURKIE,* ROBERT H. LOKEY,* FLOYD O. FITTS* AND WILLIAM C. FINLAY.* *Med. College of Alabama.*

459. Neutralization of infused acid by the nephrectomized dog. ROY S. SWAN* AND ROBERT F. PITTS. *Cornell Univ. Med. College.*

345. Effect of potassium in nephrectomized rats with hypokalemic alkaloses. JACK ORLOFF,* T. J. KENNEDY, JR.* AND R. W. BERLINER. *Natl. Heart Inst.*

Cellular: Enzymes

THURSDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 17

Chairman: S. R. Tipton

393. Phosphatases of the cell surface of intestinal cells. A. ROTHSTEIN, R. MEIER* AND T. SCHARFF.* *Univ. of Rochester School of Medicine.*

243. Enzymatic conversion. J. GORDIN KAPLAN (intr. by C. B. WELD). *Dalhousie Univ.*

268. Cellulase of *Teredo*. CHARLES E. LANE AND LEONARD J. GREENFIELD.* *Univ. of Miami.*

398. Oxidative enzymes in house fly mitochondria. BERTRAM SACKTOR (intr. by LEIGH CHADWICK). *Chemical Corps Med. Labs.*

201. The immobilization reaction in firefly luminescence. J. WOODLAND HASTINGS,* W. D. MCELROY AND JANE COULOMBRE.* *Johns Hopkins Univ.*

47. Carbohydrate metabolism of developing egg and embryo. J. H. BODINE. *State Univ. of Iowa.*

471. Respiratory metabolism of grasshopper embryos (*Chortophaga viridifasciata*). SAMUEL R. TIPTON AND GEORGIA S. ST. AMAND.* *Oak Ridge Natl. Lab. and Univ. of Tennessee.*

487. Effects of some intermediary metabolites on rate of oxygen consumption of a colorless euglenoid flagellate, *Astasia klebsii*. HERMAN VON DACH (intr. by CHARLES F. MORGAN). *Georgetown Univ. School of Medicine.*

205. Naturally occurring antimitotic substance. L. V. HEILBRUNN AND WALTER L. WILSON.* *Univ. of Pennsylvania and Univ. of Vermont.*

148. Comparative studies upon reticulo-endothelial activity in different mice strains. E. R. GABRIELI (intr. by D. H. Barron). *Yale Univ. School of Medicine.*

9. Constancy of polymerization of DNA in various rat organs. NORMAN G. ANDERSON (intr. by C. W. SHEPPARD). *Oak Ridge Natl. Lab.*

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*

Members and guests of all Societies are cordially welcome.

Thursday Afternoon, April 9, 1:15 p.m.

An asterisk following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Endocrine: Stress

THURSDAY, 1:15 P.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: E. P. Ralli

512. Eosinophile counts on normal dogs during prolonged fasting. C. M. WILHELMJ, E. M. RACHER,* V. M. MEYERS,* D. P. MILANI* AND H. H. MCCARTHY.* *Creighton Univ. School of Medicine.*

378. Hypophysectomy and domestication in the Norway rat. CURT P. RICHTER AND DAVID E. WOOD.* *Johns Hopkins Univ. School of Medicine.*

522. Differences in adrenal response to adverse conditions in wild and domesticated Norway rats. JAMES W. WOODS (intr. by PHILIP BARD). *Johns Hopkins Univ. School of Medicine.*

173. Endocrine influences upon eosinophilic leukocyte. ALBERT S. GORDON AND JACQUES PADAWER.* *New York Univ.*

309. Effect of hypothalamic lesions on stress induced eosinopenia in the cat. S. M. MCCANN,* G. L. LAQUEUR,* L. H. SCHREINER,* E. ROSEMBERG,* E. ANDERSON AND D. M. RIOCH. *Army Med. Service Grad. School and Natl. Insts. of Health.*

143. Evaluation of susceptibility to stress stimuli determined by 'stress' lymphocytes. JULES A. FRANK* AND THOMAS F. DOUGHERTY. *Univ. of Utah College of Medicine.*

207. Effect of cortisone on function, capacity and activity of reticulo-endothelial system. J. H. HELLER (intr. by C. N. H. LONG). *Yale Univ. School of Medicine.*

159. Stress and oxygen poisoning. R. GERSCHMAN AND P. W. NADIG (intr. by W. O. FENN). *Univ. of Rochester School of Medicine.*

93. Relationship of adrenal ascorbic acid changes, adrenal corticoid activity and electrolyte changes in blood, urine and tissues during cold stress of rats. FRANCES MAE DACOSTA,* WALTER M. BOOKER, ARNOLD H. MALONEY, WILLIAM M. JONES* AND CLEO FROIX.* *Howard Univ.*

Circulation: Heart; Various

THURSDAY, 1:15 P.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: T. G. Bernthal

117. Relation of pulse pressure to cardiac stroke volume. T. G. SCHNABEL, JR.* AND ISAAC STARR. *Univ. of Pennsylvania School of Medicine.*

1540. Hemodynamic factors influencing measurement of stroke volume, peripheral resistance and cardiac work. L. H. PETERSON, G. CHOQUETTE* AND L. GREENE.* *Univ. of Pennsylvania.*

242. Regulation of cardiac output during muscular exercise. FRED F. KAO AND LOUISE H. RAY (intr. by J. O. PINKSTON). *State Univ. of New York Med. Center at New York.*

4. Cardiac effects of a central stimulant, α-(2-piperidyl) benzhydrol hydrochloride. SHANNON C. ALLEN, M. H. APRISON* AND LOIS CALHOUN.* *Galesburg State Research Hosp.*

102. Effect of mode of leading on configuration and electrical output of frog heart. H. W. DISERENS (intr. by M. MASON GUEST). *Univ. of Texas Med. Branch.*

74. Metabolism of isotopic acetate, propionate and succinate by the blood-perfused isolated heart. H. MEAD CAVERT,* JOHN A. JOHNSON* AND NATHAN LIFSON. *Univ. of Minnesota.*

339. Effluographic determination of K^{42} release as related to action potential of heart muscle. J. M. O'BRIEN* AND W. S. WILDE. *Tulane Univ. and Oak Ridge Natl. Lab.*

524. Endogenous metabolism of ventricular slices of rats and rabbits on atherogenic diet. BERNARD WORTMAN,* CLIFFORD A. ANGERER AND ERIC OGDEN. *Ohio State Univ.*

344. Metabolism of energy-rich phosphate in the isolated heart studied with radioactive phosphate and the action of adrenalin. AKIRA OMACHI,* JOHN M. GINSKI,* MITSUKO ETO* AND A. G. MULDER. *Stritch School of Medicine, Loyola Univ. Grad. School.*

458. Effects of age on blood pressure in the fowl. PAUL D. STURKIE, H. S. WEISS* AND R. K. RINGER.* *Rutgers Univ.*

Blood: Plasma Expanders; Iron Metabolism

THURSDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 14

Chairman: L. M. Tocantins

437. Effect of massive transfusions on blood volume and circulatory dynamics. EDWIN L. SMITH, RUSSELL A. HUGGINS AND RICHARD A. SEIBERT.* *Univ. of Texas and Baylor Univ.*

502. Water retention and hyponatremia produced in edematous cardiac patients by Pitressin tannate administration. R. E. WESTON, I. B.

HANENSON,* J. GROSSMAN,* E. R. BORUN,* M. WOLFMAN* AND L. LEITER.* *Montefiore Hosp.*

1538. Problems in use of rapidly excreted dyes for multiple determinations of plasma volume. ALVIN E. LEWIS (intr. by JOHN FIELD). *Univ. of California School of Medicine at Los Angeles.*

424. Prevention of hemorrhagic shock by dextrans. ROBERT E. SEMPLE (intr. by JAMES CAMPBELL). *Univ. of Toronto.*

864. Relatively homogeneous dextran fractions for physiological evaluation. WALLACE F. RUNGE,* RAYMOND S. DALTER* AND HOMER E. STAVELY. *Commercial Solvents Corp.* (Biochem.)

107. Influence of hyaluronidase on absorption of plasma substitutes given subcutaneously. LOUIS B. DOTTI AND WILLIAM J. PYLES.* *St. Luke's Hosp.*

227. Efficiency of P.G. as a plasma expander. STEVEN M. HORVATH, A. Y. WERNER,* D. M. MACCANON* AND D. W. KNAPP.* *State Univ. of Iowa.*

132. Influence of salicylic acid isomers on melting temperature of gelatin and oxypolygelatin. GEORGE A. FEIGEN AND I. L. TRAPANI.* *Stanford Univ.*

194. Distribution of injected radioiron among tissues and tissue fractions of mice. JOHN K. HAMPTON, JR. (intr. by H. S. MAYERSON). *Tulane Univ. School of Medicine.*

122. Iron turnover rates and pathways. PAUL J. ELMLINGER (intr. by JOHN H. LAWRENCE). *Univ. of California.*

149. Relationship between ferritin and hemosiderin in iron storage and iron mobilization. BEVERLY WESCOTT GABRIO,* ARNE SHODEN* AND CLEMENT A. FINCH. *Univ. of Washington School of Medicine.*

Muscle

THURSDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 17

Chairman: W. R. Amberson

335. Electronic frequency analysis of biological wave forms. FRANK W. NOBLE,* ROBERT L. BOWMAN* AND BERT R. BOONE. *Natl. Heart Inst.*

235. Site of origin and velocity of propagation of fibrillary potentials of denervated muscle. L. W. JARCHO, R. M. DOWBEN,* B. BERMAN* AND J. L. LILIENTHAL, JR. *Johns Hopkins Univ.*

166. Longitudinal mechanical impedance of muscle at low frequencies. DAVID E. GOLDMAN AND CALMAN LEVICH.* *Naval Med. Research Inst.*

49. Post-tetanic potentiation of intact human skeletal muscle. STELLA Y. BOTELHO AND LEON CANDER (intr. by R. D. DRIPPS). *Univ. of Pennsylvania Grad. School of Medicine.*

303. Fatigue patterns of anterior tibial muscles in dogs. J. E. MARKEE, B. J. WILDER,* T. C. KENASTON,* P. A. MABE, JR.,* T. L. DULIN,* J. A. GERGEN,* F. R. HOOK, JR.* AND MAUDE F. WILLIAMS.* *Duke Univ.*

422. Influence of thyroid hormone on skeletal muscle performance. NEENA B. SCHWARTZ* AND ALLEN LEIN. *Northwestern Univ. Med. School.*

206. Mutually facilitatory influence of simultaneous static and dynamic exercise. F. A. HELLEBRANDT, SARA JANE HOUTZ* AND DONALD E. HOCKMAN.* *Univ. of Illinois and VA.*

322. Comparison of muscular dystrophy induced by vitamin E deficiency and cortisone administration in rabbits. A. E. MILMAN* AND A. T. MILHORAT. *Cornell Univ. Med. College and New York Hosp.*

463. Cystometric studies of the bladder function in the cat. PEI-CHIN TANG* AND THEODORE C. RUCH. *Univ. of Washington School of Medicine.*

88. Electropotential changes in the isolated mammalian urinary bladder. E. L. COREY. *Univ. of Virginia Med. School.*

316. Conduction in smooth muscle of Phascolosoma. CARL E. MELTON* AND C. LADD PROSSER. *Univ. of Illinois and Marine Biological Lab.*

Panel Discussion: Diffusing Capacity of Lung; Its Relation to Circulation and Ventilation

THURSDAY, 1:15 P.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: J. L. Lilienthal, Jr.

Theoretical and practical considerations of CO uptake in the lung. ROBERT E. FORSTER. *Grad. School of Medicine, Univ. of Pennsylvania, Philadelphia.*

Theory and practice of the low O_2 method for diffusing capacity. RICHARD L. RILEY. *Dept. of Environmental Medicine, Johns Hopkins Univ., Baltimore, Md.*

CO uptake in steady state in normal and pathological subjects at rest and during exercise. GILES F. FILLEY. *Dept. of Physiology, Trudeau Fndn., Saranac, N. Y.*

Special Session: Teaching of Physiology

THURSDAY, 1:15 P.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: D. B. Dill

Experimental project method of laboratory teaching in a medical physiology course. RICHARD K. OVERMAN AND A. K. DAVIS.* *Dept. of Physiology, Univ. of Tennessee College of Medicine, Memphis.*

Survey of physiology instruction in schools of physical therapy. HELEN J. HISLOP AND NORMA M. HAJEK (intr. by H. M. HINES). *Dept. of Physiology, State Univ. of Iowa College of Medicine, Iowa City.*

An effective and inexpensive audio-visual aid. G. N. LOOFBOURROW. *Dept. of Physiology, Univ. of Kansas, Lawrence.*

First things first. L. L. LANGLEY AND E. CHERASKIN. *Univ. of Alabama School of Dentistry, Birmingham.*

Physiological content of elementary biology courses. JULIAN L. SOLINGER (intr. by O. E. REYNOLDS). *Dept. of Biology, Simmons College, Boston, Mass.*

Undergraduate physiology in American Colleges. E. G. STANLEY BAKER (intr. by L. M. N. BACH). *Dept. of Zoology, Drew Univ., Madison, N. J.*

Physiology in zoological education. C. LADD PROSSER. *Dept. of Physiology, Univ. of Illinois, Urbana.*

General discussion of teaching problems in physiology. Consideration of questions and comments by those attending the session.

Physiology Society Business Meeting

THURSDAY, 4:00 P.M.—PALMER HOUSE, RED LACQUER ROOM

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON HOTEL, NORTH BALLROOM

Program on page 477

Friday Morning, April 10, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Endocrine: Pituitary; Parathyroid

FRIDAY, 9:00 A.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: Warren Nelson

94. Recovery of thyrotrophin in blood of goitrous rats. SAVINO A. D'ANGELO. *Jefferson Med. College.*

385. Effect of adrenalectomy, hypophysectomy and replacement therapy on allantoin excretion in rats. E. B. ROMANOFF AND C. HUNT (intr. by HUDSON HOAGLAND). *Worcester Fndn. for Exptl. Biology.*

127. Effect of pyridoxine deficiency on anterior pituitary gonadotrophic content. HERBERT M. EVANS, ELOISE WOOTEN,* MARJORIE M. NELSON* AND MIRIAM E. SIMPSON. *Univ. of California.*

854. An equine pituitary corticotrophin and its effect on rat adrenal. ARTHUR P. RINFRET,* A. CLARK GRIFFIN, BERNARD C. AND WEXLER.* *Stanford Univ.* (Biochem.)

723. Effect of hypophysectomy and subsequent hormone therapy on electrolyte excretion and renal function in dogs with ascites. DAVID S. HOWELL, JAMES O. DAVIS AND E. CONVERSE PEIRCE, 2ND (intr. by HARRY D. BAERNSTEIN). *Natl. Heart Inst. and USPHS Hosp.* (Biochem.)

851. Effect of hypophysectomy and administration of pituitary hormones on phosphorus metabolism of certain organs of the rat. B. E. RIEDEL AND H. A. DELUCA (intr. by A. B. MACALLUM). *Univ. of Western Ontario.* (Biochem.)

73. Elevation of urinary mucoprotein in rats following parathormone extract. H. R. CATCHPOLE AND M. B. ENGEL.* *Univ. of Illinois College of Dentistry.*

822. Biological assay of calcium-mobilizing hormone (CMH) based on maintenance of serum calcium in parathyroidectomized rats. PAUL L. MUNSON, ALEXANDER D. KENNY* AND OSCAR A. ISERI.* *Harvard School of Dental Medicine* (Biochem.)

435. Renal tubule reabsorption of phosphate in hyperparathyroidism before and after removal of parathyroid adenoma. JONAS H. SIROTA. *Mount Sinai Hosp.*

332. Effects of nitrofuran compounds on the testis of the rat. WARREN O. NELSON AND EMIL STEINBERGER.* *State Univ. of Iowa College of Medicine.*

Neural: Spinal Cord; Reflexes

FRIDAY, 9:00 A.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: L. M. N. Bach

520. Recording central nervous activity with intracellular ultramicroelectrodes; use of negative-capacity amplifier to improve transient response. J. WALTER WOODBURY. *Univ. of Washington.*

157. Sensitivity of spinal cord and its nerve roots to anoxia. SAMUEL GELFAN AND I. M. TARLOV.* *New York Med. College.*

284. Effect of ischemia upon the completely isolated spinal cord. DOUGLAS LIDDICOAT* AND A. J. KOSMAN. *Northwestern Univ. Med. School.*

210. Alterations in monosynaptic reflexes of flexor muscles with static stretch. ELWOOD HENNEMAN AND HELGE HERTZ.* *Johns Hopkins Univ. Med. School.*

340. Augmentation of spinal reflexes early in polarization. SIDNEY OCHS (intr. by JOHN Z. HEARON). *Univ. of Chicago.*

256. Dorsal root reflex and the cord potentials associated with strychnine tetanus. K. KOIZUMI* AND CHANDLER MCC. BROOKS. *State Univ. of New York Med. Center at New York.*

489. Facilitation and inhibition in the peripheral neuromuscular system of man. IRVING H. WAGMAN AND L. B. FEINSCHIL.* *Jefferson Med. College.*

175. Effect of variation in intensity of afferent stimulation on the reflex response of antagonists about the ankle joint in decerebrate and spinal cat. A. R. GRAHAM* AND G. W. STAVRAKY. *Univ. of Western Ontario.*

147. Unit activity accompanying flexor twitch reflexes. M. G. F. FUORTES. *Army Med. Service Grad. School.*

123. Failure of Prostigmine to block functional inhibition of the flexion reflex. J. D. EMERSON,* J. M. BRUHN AND G. M. EMERSON.* *Med. College of Alabama and Univ. of Alabama School of Dentistry.*

Circulation: Blood Vessels

FRIDAY, 9:00 A.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: A. B. Hertzman

3. Mechanics of vasoconstriction. ROBERT S. ALEXANDER. *Western Reserve Univ. School of Medicine.*

86. Direct estimation of vascular smooth muscle tone. T. COOPER (intr. by F. E. FRANKE). *St. Louis Univ. School of Medicine.*

2. Peripheral arteriolar reactivity gradient in the hamster and rat. ROBERT P. AKERS* AND RICHARD E. LEE. *New York Hosp. and Natl. Heart Inst.*

281. Influence of erythrocyte concentration upon the pressure-flow relationship in the hindleg. MATTHEW N. LEVY AND LEONARD SHARE. *Western Reserve Univ. School of Medicine.*

436. Physiology of the vasa vasorum. DURWOOD J. SMITH. *Univ. of Rochester and Univ. of Vermont.*

382. Korotkoff sounds and oscillometric pulsations as indices of blood flow through vessels. SIMON RODBARD. *Michael Reese Hosp.*

267. Wave propagation in intact human arteries. MILTON LANDOWNE. *Natl. Heart Inst. and Baltimore City Hosps.*

154. Recording of central venous pressure from the right anticubital vein during small changes in blood volume. O. H. GAUER,* H. O. SIEKER* AND J. P. HENRY. *Wright-Patterson AFB.*

35. Effects of abdominal compression on right auricular and inferior vena caval pressures. JOHN R. BEEM AND ROBERT E. THOMASSON (intr. by HENRY A. SCHROEDER). *Washington Univ. School of Medicine and St. Louis City Hosp.*

759. Rate of respiration and glycolysis by intact human and dog aortas. J. E. KIRK, P. G. EFFERSØE* AND S. CHIANG.* *Washington Univ. School of Medicine.* (Biochem.)

Capillaries and Fluid Exchanges

FRIDAY, 9:00 A.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: J. R. Pappenheimer

298. Petechial formation in cheek pouch of the hamster (*Mesocricetus auratus*). B. R. LUTZ, G. P. FULTON, G. YOUNG,* M. H. SHULMAN* AND H. J. BERMAN.* *Boston Univ.*

431. Effect of cortisone acetate on healing of burns in hamster cheek pouch. MAURICE H. SHULMAN,* GEORGE P. FULTON AND GEORGE P. MORONT.* *Boston Univ.*

677. Alteration in dynamics of transcapillary exchange resulting from intravenous injection of hyaluronidase. M. DON TURNER,* CARL B. FERREL* AND RICHARD R. OVERMAN. *Univ. of Tennessee College of Medicine.*

373. Effects of blood-flow on kinetics of molecular diffusion from capillary circulation. EUGENE M. RENKIN (intr. by HOWARD J. CURTIS). *Brookhaven Natl. Lab.*

1537. Renal filtration and ultramicroscopic structure of the glomerulus. B. VINCENT HALL (intr. by DOUGLAS E. SMITH). *Univ. of Illinois and Argonne Natl. Lab.*

614. Mechanism of formation of glomerular fluid. FRANCIS P. CHINARD. *Johns Hopkins Univ. School of Medicine.* (Biochem.)

103. Clearance rates following intra-arterial injection of radioactive sodium as a measure of regional blood flow. ERNEST L. DOBSON,* GEORGE F. WARNER,* NELLO PACE, CAROLINE R. FINNEY* AND MURIEL E. JOHNSTON.* *Univ. of California.*

52. Sympathetic vasomotor paths to hindleg muscle vascular beds. RICHARD F. BOWLING,* HAROLD D. GREEN, JOSEPH A. BARNES,* IVAN L. HOLLEMAN* AND PAUL YOUMANS.* *Bowman Gray School of Medicine.*

21. Catabolic hydrolytic protein products inducing changes in capillary blood vessels under malnutrition. THEODORE A. BALOURDAS (intr. by HARRY A. CHARIPPER). *New York Univ.*

476. Influence of various agents on blood-cerebrospinal fluid potential. R. D. TSCHIRGI AND J. L. TAYLOR.* *Univ. of Chicago.*

519. Effect of hormones on calcium 45 accumulation in various tissues. L. F. WOLTERINK, R. L. CORNWALL,* C. VINSON* AND LOIS L. COLE.* *Michigan State College.*

Alimentary: Secretion

FRIDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 14

Chairman: W. S. Rehm

10. Absorption of glucose by salivary gland slices. RUBERT S. ANDERSON. *Univ. of South Dakota School of Medicine.*

444. Effect of an anticholinesterase compound on submaxillary gland K. LEA M. SOMERS AND J. H. WILLS. *Chemical Corps Med. Labs.*

370. Implications of a new hypothesis of the mechanism of gastric secretion. WARREN S. REHM. *Univ. of Louisville School of Medicine.*

356. Neurohumoral influence on gastric hydrochloric acid secretion. R. W. PORTER, R. L. LONGMIRE AND J. D. FRENCH (intr. by S. ROBERTS). *VA Hosp. and Univ. of California School of Medicine at Los Angeles.*

343. Biphasic effect of insulin on gastric secretion in man. WILLIAM H. OLSON. *Michael Reese Hosp.*

300. Electrophoretic study of whole human gastric juice. MARIAN H. MACK,* STEWART WOLF AND KURT G. STERN.* *Cornell-New York Hosp. and Brooklyn Polytechnic Inst.*

248. Gastric secretion of fluorene-2-azo-2′, 4′-dihydroxybenzene in rat, mouse and guinea pig. MICHAEL KLEIN, MARY F. ARGUS AND FRANCIS E. RAY (intr. by FRANKLIN HOLLANDER). *Univ. of Florida.*

223. Influence of exogenous CO_2 on the isolated gastric mucosa. C. ADRIAN M. HOGBEN (intr. by JAMES A. SHANNON). *Natl. Heart Inst.*

485. Secretion of pepsin *in vitro*. RAMON VILLARREAL (intr. by VIRGINIA D. DAVENPORT). *Univ. of Utah College of Medicine.*

97. Efficiency of gastric acid secretion. HORACE W. DAVENPORT. *Univ. of Utah College of Medicine.*

80. Do vagus nerves have an inhibitory influence on gastric secretion? CHARLES F. CODE. *Mayo Clinic and Fndn.*

Muscle: Elementary Processes I

FRIDAY, 9:00 A.M.—PALMER HOUSE, DINING ROOM 17

Chairman: R. W. Ramsey

504. A new protein in skeletal muscle extracts. JOHN I. WHITE,* SYLVIA HIMMELFARB,* BRIGITTE BLANKENHORN* AND WILLIAM R. AMBERSON. *Univ. of Maryland School of Medicine.*

473. Molecular kinetics of the actomyosin-ATP system. Y. TONOMURA AND S. WATANABE (intr. by MANUEL MORALES). *Univ. of Hokkaido.*

381. Effect of Ouabain on actomysin threads. JANE S. ROBB AND SAMUEL MALLOV. *State Univ. of New York College of Medicine at Syracuse.*

259. Amino acid composition of actin, myosin and tropomyosin. D. R. KOMINZ AND K. LAKI (intr. by H. SPECHT). *Natl. Insts. of Health.*

203. Contraction characteristics of surface-spread actomyosin. TERU HAYASHI AND RAJA ROSENBLUTH.* *Columbia Univ.*

240. Isometric studies of surface-spread actomyosin fibers. ROSALIE JOSEPH (intr. by ROBERTS RUGH). *Columbia Univ.*

817. Energy yielding reactions in muscular contraction. W. F. H. M. MOMMAERTS. *Duke Univ. School of Medicine.* (Biochem.)

678. Combining ratio of cardiac myosin and actin. J. GERGELY AND MARY A. GOUVEA.* *Massachusetts Gen. Hosp. and Harvard Med. School.* (Biochem.)

53. Control of Energy release in extracted muscle fibers. EMIL BOZLER. *Ohio State Univ.*

76. Experiments on glycerin extracted heart muscle. LEON CHURNEY (intr. by L. A. TOTH). *Louisiana State Univ. School of Medicine.*

51. Removal of myokinase activity from myosin B. WILLIAM J. BOWEN AND TIMOTHY D. KERWIN.* *Natl. Insts. of Health.*

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*

Members and guests of all Societies are cordially welcome.

Friday Afternoon, April 10, 1:15 p.m.

An asterisk following an author's name indicates "by invitation." For complete institutional connection and address, see abstract, Part I.*

Endocrine: Insulin, Carbohydrate

FRIDAY, 1:15 P.M.—PALMER HOUSE, GRAND BALLROOM

Chairman: D. J. Ingle

1000. Isolated perfused rat liver—changes in physiological state associated with transfer from animal to perfusion system. R. W. BRAUER, G. F. LEONG,* J. R. HOLLOWAY* AND R. L. PESSOTTI.* *Naval Radiological Defense Lab.* (Pharmacol.)

269. Effect of liver on utilization of glucose by extra-hepatic tissues. S. LANG,* M. S. GOLDSTEIN* AND R. LEVINE. *Michael Reese Hosp. and Univ. of Chicago.*

174. Effects of insulin on intact rat leg muscle. D. R. H. GOURLEY. *Univ. of Virginia Med. School.*

396. Effect of HGF on acidosis and lipids in intact and depancreatized dogs. J. RUTMAN,* I. J. PINCUS, L. BROWN* AND M. SCOTT.* *Jefferson Med. College.*

958. Effect of beta-hydroxybutyric acid on glucose oxidation in insulin treated eviscerated animals. ARNE N. WICK AND DOUGLAS R. DRURY.* *Scripps Metabolic Clinic and Univ. of Southern California.* (Biochem.)

399. Insulin as a growth hormone. JAMES SALTER* AND CHARLES H. BEST. *Univ. of Toronto.*

433. Anterior pituitary hormones and carbohydrate metabolism. M. W. SINKOFF, R. C. DE BODO, S. P. KIANG AND H. DEN (intr. by L. W. EICHNA). *New York Univ. College of Medicine.*

99. Effects of growth hormone and of prolactin on carbohydrate metabolism in hypophysectomized and adrenalectomized-hypophysectomized dogs. R. C. DE BODO, M. W. SINKOFF,* H. DEN* AND S. P. KIANG.* *New York Univ. College of Medicine.*

530. Method for the assay of insulin in blood. MUNEVVER YENERMEN,* JEROME CORNFIELD,* ROBERT W. BATES* AND EVELYN ANDERSON. *Natl. Insts. of Health.*

323. Action of insulin on uptake of sugars by isolated rat diaphragm. ARTHUR MIRSKY, DAVID HAFT* AND GLADYS PERISUTTI.* *Univ. of Pittsburgh School of Medicine.*

997. Relationship of cobalt chloride to hyperglycemic-glycogenolytic factor (HGF). HARRY F. WEISBURG AND CHARLOTTE M. KAPLAN (intr. by F. J. MULLIN.) *Chicago Med. School and Mount Sinai Med. Research Fndn.*

Neural: Peripheral

FRIDAY, 1:15 P.M.—PALMER HOUSE, FOYER TO GRAND BALLROOM

Chairman: H. E. Himwich

525. Excitation and conduction in single crustacean motor axons. ERNEST B. WRIGHT, WILLIAM ADELMAN* AND PAUL COLEMAN.* *Univ. of Rochester School of Medicine.*

426. Penetration of intact frog nerve by ions and sucrose. ABRAHAM M. SHANES AND MORRIS D. BERMAN.* *Natl. Insts. of Health.*

451. Effects of some insecticides on conductance of peripheral nerve. PETER A. STEWART AND MURRAY BLUM (intr. by R. E. JOHNSON). *Univ. of Illinois.*

327. Nerve depolarization produced by narcotics. L. J. MULLINS AND C. T. GAFFEY.* *Purdue Univ.*

153. Effects of ultraviolet on electrical properties of invertebrate nerve. E. L. GASTEIGER (intr. by ALEXANDER FORBES). *Massachusetts General Hosp. and Harvard Med. School.*

61. Functional characteristics of afferent fibers from tooth pulp. JOHN M. BROOKHART, W. K. LIVINGSTON* AND FREDERICK P. HAUGEN.* *Univ. of Oregon Med. School.*

423. Response pattern of sensory endings in tooth of the cat. DONALD SCOTT, JR., F. R. SHROFF* AND A. B. GABEL.* *Univ. of Pennsylvania Schools of Medicine and of Dentistry.*

6. Temporal and spatial facilitation of neurally excited electroplax of electric eel. MARIO ALTAMIRANO-ORREGO,* CHRISTOPHER W. COATES,* HARRY GRUNDFEST, C-Y. KAO* AND DAVID NACHMANSOHN. *Columbia Univ. and New York Zoological Society.*

64. Some properties of unit warm receptors. THEODORE HOLMES BULLOCK AND DYREL A FAULSTICK.* *Univ. of California at Los Angeles.*

390. Effect of histamine analogues on cutaneous pain. SOL ROY ROSENTHAL. *Univ. of Illinois College of Medicine.*

Circulation: In Special Organs. Tooth Growth.

FRIDAY, 1:15 P.M.—PALMER HOUSE, RED LACQUER ROOM

Chairman: J. M. Crismon

283. Further studies in animals with controlled cardiac output. D. H. LEWIS,* W. J. RASHKIND, J. Y. BOWIE* AND D. F. HEIMAN.* *Univ. of Pennsylvania School of Medicine.*

510. Myocardial factor in control of coronary flow. CARL J. WIGGERS. *Western Reserve Univ. School of Medicine.*

249. Effects of exercise on cerebral blood flow and metabolism in man. JEROME KLEINERMAN AND LOUIS SOKOLOFF (intr. by SEYMOUR S. KETY). *Univ. of Pennsylvania Grad. School of Medicine and Western Reserve Univ.*

366. Studies of marrow pressures and the temperatures in the long bones of dogs. IRVING M. RASGON,* IRVING RAPPAPORT* AND JOHN P. MARBARGER. *Univ. of Illinois.*

429. Effect of India ink on bromsulfalein excretion. MORIS L. SHORE* AND D. B. ZILVERSMIT. *Univ. of Tennessee.*

260. Effects of continuous infusions of epinephrine and nor-epinephrine into the portal vein of dogs. W. G. KUBICEK, F. J. KOTTKE AND MILDRED E. OLSON.* *Univ. of Minnesota Med. School.*

230. Basic data on emergence of deciduous teeth in the monkey (*Macaca mulatta*). V. O. HURME* AND G. VAN WAGENEN. *Forsyth Dental Infirmary and Yale Univ. School of Medicine.*

Excretion: Glomerular and Tubular

FRIDAY, 1:15 P.M.—PALMER HOUSE, CRYSTAL ROOM

Chairman: E. E. Selkurt

87. Renal effects of sodium nitroprusside in dogs. A. C. CORCORAN, I. H. PAGE AND H. P. DUSTAN.* *Cleveland Clinic Fndn. and Bunts Educational Inst.*

244. Effects of unilateral splanchnicotomy on renal excretion of solutes. S. A. KAPLAN, CLARK D. WEST AND SAMUEL J. FOMON (intr. by GEORGE H. ACHESON). *Univ. of Cincinnati College of Medicine.*

216. Effect of acute arteriovenous fistula on renal functions. JAMES G. HILTON, DAVID RANDALL HAYS AND EDWARD H. BOWEN (intr. by HARRY B. VAN DYKE). *Columbia Univ. and St. Luke's Hosp.*

507. Stimulation of the renal transport of PAH by pantothenate. VIRGIL D. WIEBELHAUS,* KARL H. BEYER, HORACE F. RUSSO,* FRANCIS T. BRENNAN* AND ELIZABETH R. WYNOSKY.* *Sharp & Dohme, Inc.*

421. Renal tubular reabsorption of acetoacetate in the normal dog. LOUIS SCHWAB* AND WILLIAM D. LOTSPEICH. *Univ. of Cincinnati College of Medicine.*

90. Studies of renal malic acid metabolism *in vivo*. JAMES W. CRAIG, MAX MILLER, J. EVANS OWENS AND HIRAM WOODWARD, JR. (intr. by JOSEPH T. WEARN). *Western Reserve Univ. School of Medicine.*

38. Influence of chloride ion on the renal tubular reabsorption of inorganic sulfate in the dog. FREDRIK BERGLUND (intr. by GUSTAV ECKSTEIN). *Univ. of Cincinnati College of Medicine.*

22. Effects of Benemid on renal oxygen consumption and hemodynamics in human subjects. E. S. BARKER, J. K. CLARK AND H. G. BARKER (intr. by F. D. W. LUKENS). *Univ. of Pennsylvania.*

26. Renal excretion of bicarbonate and potassium in premature infants. H. L. BARNETT, F. TUDVAD,* AND H. MCNAMARA.* *New York Hosp.-Cornell Med. Center.*

56. Effects of CO_2 tension on renal tubular bicarbonate reabsorption. PAUL BRAZEAU* AND ALFRED GILMAN. *Columbia Univ.*

470. Effects of variations in glomerular filtration rate on bicarbonate absorption. DAVID D. THOMPSON AND MARTHA J. BARRETT (intr. by D. J. EDWARDS). *Cornell Univ. Med. College.*

Alimentary: Motility and Other

FRIDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 14

Chairman: W. B. Youmans

258. Lipolytic activity of human blood serum. A new method for its determination and its possible relation to pancreatic lipase. SIMON KOMAROV, HARRY SHAY AND CHARLOTTE ZISLIN.* *Temple Univ. School of Medicine.*

118. A simple method for splicing the common bile duct into the duodenum of the rat. L. E. EDWARDS AND J. L. GARBER.* *Med. College of Virginia.*

183. *In vivo* method for quantitative assay of orally administered antiulcer drugs. ROBERT F. GROVER* AND CLARENCE A. MAASKE. *Univ. of Colorado School of Medicine.*

233. Effect of prolonged intragastric feeding on oral ingestion. HENRY D. JANOWITZ AND FRANKLIN HOLLANDER. *Mount Sinai Hosp.*

379. Dogs' blood-sugar level affected by taste and sham-feeding. E. RIDLEY,* I. A. SHARE,

J. M. BERRY* AND W. S. MCCULLOCH. *Univ. of Illinois College of Medicine.*

294. Technical and physiological considerations in measuring gastrointestinal pressures in man. STANLEY H. LORBER AND HARRY SHAY. *Temple Univ. School of Medicine.*

215. Determination of basal intraluminal pressures in the alimentary canal of man. N. C. HIGHTOWER, JR. *Scott and White Clinic.*

130. Combined effect of tetraethylammonium chloride and hypoxia on intestinal motility in rats. H. S. FANG,* DAVID W. NORTHUP AND EDWARD J. VAN LIERE. *West Virginia Univ. School of Medicine.*

359. Action of $NaHCO_3$ upon tone and motility of duodenal bulb. J. P. QUIGLEY, JAMES M. HUDGINS* AND JOHN W. ELLIS.* *Univ. of Tennessee.*

452. Effect of 'SC-3171' and 'Pavatrine' on propulsive motility of dog small intestine. J. CLIFFORD STICKNEY, DAVID W. NORTHUP AND EDWARD J. VAN LIERE. *West Virginia Univ. School of Medicine.*

Muscle: Elementary Processes

FRIDAY, 1:15 P.M.—PALMER HOUSE, DINING ROOM 17

Chairman: Wm. J. Bowen

380. Excitability of muscle following intracellular decalcification. PETER RIESER (intr. by H. M. HINES). *State Univ. of Iowa College of Medicine.*

508. Comparative study of data obtained by microinjection of solutions into isolated muscle fiber of frog. FLOYD J. WIERCINSKI. *Hahnemann Med. College.*

129. Effect of intracellular injections on membrane potential of muscle fibers. GERTRUDE FALK (intr. by ARNO B. LUCKHARDT). *Univ. of Illinois.*

446. Ultrastructure of mitochondria from insect flight muscle. DAVID SPIRO (intr. by F. O. SCHMITT). *Massachusetts Inst. of Technology.*

48. Single fiber action potentials in insect fibrillar muscle. EDWARD G. BOETTIGER AND FRANCES MCCANN.* *Univ. of Connecticut.*

287. Fixed charge hypothesis (FCH) for selective ionic accumulation. GILBERT LING. *Johns Hopkins Hosp.*

137. Effect of weak ultrasonic irradiation upon normal and denervated skeletal muscle. ERNST FISCHER. *Med. College of Virginia.*

220. Action potential and refractory period of striated muscle in man. PAUL F. A. HOEFER, GILBERT H. GLASER,* CHRISTIAN HERRMANN, JR.* AND THELMA A. ESTRIN.* *Columbia Univ. College of P. & S.*

330. Membrane potential changes at a single muscle end-plate produced by transitory application of acetylcholine with an electrically controlled microjet. WILLIAM L. NASTUK. *Columbia Univ. College of P. & S.*

403. Fusion frequency and kinetics of active state in muscular tetanus. ALEXANDER SANDOW AND GEORGE E. MAURIELLO.* *New York Univ.*

263. Analysis of the size of motor unit action potentials in neuromuscular disorders. EDWARD H. LAMBERT AND REX O. MCMORRIS.* *Mayo Clinic and Fndn.*

PAPERS READ BY TITLE

14. Effect of aspirin on formalin-arthritis in normal and adrenalectomized rats. HABEEB BACCHUS AND AZEEZ BACCHUS.* *George Washington Univ.*

17. Ophthalmic ultraviolet action-spectra. A. BACHEM. *Univ. of Illinois.*

28. Effects of cortisone on renal excretion of water and electrolytes in normal and adrenalectomized dogs. ANNE C. BASS* AND C. RILEY HOUCK. *Univ. of Tennessee.*

30. Cytological alterations of adrenalcortex induced by oxygen at high pressure. JOHN W. BEAN, BURTON L. BAKER AND PAUL JOHNSON.* *Univ. of Michigan.*

39. Effects of hypophysectomy and of cortisone upon the respiration and cellular elements of bone marrow. IRWIN BERMAN* AND ALBERT S. GORDON. *New York Univ.*

58. Relation of plasma antirenin titre to renal renin concentration in the dog. BETSY BECKER BRENNAN,* R. O. BURNS* AND G. E. WAKERLIN. *Univ. of Illinois.*

108. Relation of structure of adrenocortical steroids to antiphlogistic activity. THOMAS F. DOUGHERTY AND F. L. SCHNEEBELI.* *Univ. of Utah.*

111. Independence of dorsal and ventral root potentials in the spinal cord of frog. F. T. DUN (intr. by T. C. RUCH). *Univ. of Washington.*

113. Neuromuscular transmission in frog muscle. DEXTER M. EASTON (intr. by H. D. PATTON). *Univ. of Washington.*

134. Cardiac output in monkeys. CARL B. FERREL,* M. DON TURNER* AND RICHARD R. OVERMAN. *Univ. of Tennessee.*

146. Plasma Dicumarol levels and prothrombin times in the hamster. GEORGE P. FULTON, BRENTON R. LUTZ AND DAVID L. PIERCE.* *Boston Univ.*

151. Spinal pathways for cortical and cerebellar projections in the monkey (*Macaca mulatta*). E. D. GARDNER, F. MORIN* AND J. CATALANO. *Wayne Univ.*

1536. Separation of an estrogen-like compound from the so-called background material of extracts of hydrolyzed urine. JOSEPHINE B. GARST* AND HARRY B. FRIEDGOOD. *Univ. of California.*

158. Dependence of the mecholyl induced hypotension on the hypothalamus. E. GELLHORN, E. S. REDGATE* AND E. B. SIGG. *Univ. of Minnesota.*

169. Prevention of shock during prolonged periods of ventricular fibrillation by artificial circulation and oxygenation. FRANK GOLLAN AND GEORGE R. MENEELY. *Thayer Vet. Admin. Hosp.*

177. Influence of exposure upon survival of rats after submerging in fresh water. STEPHEN W. GRAY. *Emory Univ.*

186. Depolarization and contraction in smooth muscle on rapid cooling. RITA GUTTMAN, ARNOLD M. KATZ AND JOHN F. PERKINS, JR. *Brooklyn College, Harvard Univ., Univ. of Chicago and Marine Biological Lab.*

187. Effect of anoxia on myocardial carbohydrate metabolism and coronary blood flow in intact dogs. DONALD B. HACKEL,* JEROME KLEINERMAN* AND WALTER T. GOODALE. *Western Reserve Univ. and Cleveland City Hosp., Peter Bent Brigham Hosp. and Harvard Univ.*

195. Nitrogen requirements of *Astasia chattoni*, a colorless protozoan flagellate. ROGER W. HANSON* AND THEODORE L. JAHN. *Univ. of California.*

214. Alcohol toxicity as related to (alloxan) diabetes, insulin, epinephrine and glucose in mice. WILLIAM A. HIESTAND, FRED W. STEMLER,* JACOB E. WIEBERS* AND WILLIAM T. ROCKHOLD.* *Purdue Univ.*

237. Effect of cortical ablation in the monkey on discrimination of auditory patterns. HARRY J. JERISON* AND WILLIAM D. NEFF. *Univ. of Chicago.*

245. Epinephrine stimulation of pituitary metabolism. MARTHA R. KELLER* AND SIDNEY ROBERTS. *Univ. of California and Vet. Admin. Hosp.*

252. Effects of ACTH, cortisone and estradiol on adrenal β-glucuronidase activity. E. KNOBIL (intr. by P. O. CHATFIELD). *Harvard Univ.*

279. Effect of endogenous substrate depletion on glucose metabolism in the seminal vesicle. H. A. LEVEY* AND C. M. SZEGO. *Univ. of California.*

295. Effect of anterior pituitary growth hormone on the synthesis of acetoacetate by surviving slices of rat liver. WILLIAM D. LOTSPEICH. *Univ. of Cincinnati.*

296. Sounds produced at the pyloric sphincter. HORTENSE LOUCKES,* J. P. QUIGLEY AND W. E. ROMANS.* *Univ. of Tennessee.*

299. Toxicity of fresh striated muscle extracts from various animals. DAVID I. MACHT. *Sinai Hosp.*

307. Potentiation of cysteine protection against X-radiation by dinitrophenol or hypoxia. SYLVIA H. MAYER* AND HARVEY M. PATT. *Argonne Natl. Lab.*

308. Inhibition in a simple ganglion. DONALD M. MAYNARD, JR. (intr. by T. H. BULLOCK). *Univ. of California.*

312. Observations on cellophane sorption of T-1824. PAUL L. MCLAIN. *Univ. of Pittsburgh.*

314. Effect of digitoxin and digoxin on cardiac rhythm and arterial plasma potassium before and after epinephrine injection in unanesthetized dogs. W. J. MEEK, G. S. O'BRIEN* AND Q. R. MURPHY, JR. *Univ. of Wisconsin.*

368. Influence on blood pressure of intrasynovial injection of circulation-active substances. C. I. REED, WILLIAM J. DAY* AND GEORGE H. SWEENEY.* *Univ. of Illinois.*

375. Effects of cortisone, DCA and adrenal cortical extract on renal function in intact and adrenalectomized animals. A. A. RENZI AND W. R. BOSS (intr. by R. GAUNT). *Syracuse Univ.*

383. Muscular weakness produced in young chicks by addition of aluminum hydroxide gel to the diet. SIMON RODBARD AND CHRISTINE BOLENE-WILLIAMS.* *Michael Reese Hosp.*

402. Force-velocity relation of nitrate-treated muscle. ALEXANDER SANDOW AND GEORGE E. MAURIELLO.* *New York Univ.*

407. Neurohypophyseal function in dehydrated and adrenalectomized rats as indicated by hormone assay and neurosecretory activity. WILBUR H. SAWYER AND WILLARD D. ROTH (intr. by F. L. HISAW). *Harvard Univ.*

409. Cortisone on the oxygen consumption of granulation tissue from rabbit. DANTE G. SCARPELLI,* RALPH A. KNOUFF* AND CLIFFORD A. ANGERER. *Ohio State Univ.*

427. Observations on human follicular ova. LANDRUM B. SHETTLES. *Columbia Univ.*

438. Cause of the 'pressor effect' of thiamine. JAY A. SMITH, HERBERT SOHN,* SHERWYN WARREN,* HARRIET R. WEINSTEIN* AND PIERE P. FOA. *Chicago Med. School.*

440. Measurements of kidney function in hydrated rats. LAWTON H. SMITH AND W. R. BOSS (intr. by VERNER J. WULFF). *Syracuse Univ.*

443. Action of N-allylnormorphine during labor. FRANKLIN F. SNYDER. *Harvard Univ.*

445. Pain reactions on stimulation of the quadrigeminal region. E. A. SPIEGEL, M. KLETZKIN* AND E. G. SZEKELY.* *Temple Univ.*

455. Adaptation to cold stress in Wistar rats. SANFORD H. STONE* AND W. HORSLEY GANTT. *Johns Hopkins Univ.*

462. Effect of various diets on the glycogen body of the chick. J. SZEPSENWOL. *Emory Univ.*

474. Effects of corticotropin and convulsion inducing agents on P^{32} uptake of brain phospholipids and total phosphorus containing compounds. CLARA TORDA. *Cornell Univ.*

481. Acclimatization on propulsive motility of small intestine. EDWARD J. VAN LIERE AND HELEN H. HESS.* *West Virginia Univ.*

483. Response of hypertensive dogs to adrenalectomy. L. VAN MIDDLESWORTH, WILLIAM T. TYSON* AND MAURICE SEGAL* (with technical assistance of RALPH ADDINGTON* AND WILLIAM JERNIGAN*). *Univ. of Tennessee.*

492. Effect of x-irradiation on membrane resting potential of frog sartorius fibers. VERN N. WALKER* AND J. WALTER WOODBURY. *Univ. of Washington.*

509. Oxygen uptake of crayfish cord and effect of anoxia on synaptic transmission. C. A. G. WIERSMA AND J. GARCIA RAMOS.* *California Inst. of Technology.*

515. Histochemical aspects of myocardial lesions in mice fed a yeast-protein diet. W. LANE WILLIAMS AND RICHARD B. ARONSOHN.* *Univ. of Minnesota.*

518. Relative importance of load and distortion in renal excretion. A. V. WOLF. *Walter Reed Army Medical Center.*

523. Motor representation in the postcentral gyrus after chronic ablation of precentral and supplementary motor areas. C. N. WOOLSEY, A. M. TRAVIS,* J. W. BARNARD* AND R. S. OSTENSO.* *Univ. of Wisconsin.*

529. Growth and histochemistry of x-irradiated regenerating adrenocortical tissue. LELAND C. WYMAN, RAE WHITNEY* AND DONALD I. PATT.* *Boston Univ.*

531. Concentrating activity of normal human kidney during maximal antidiuresis. GEORGE A. ZAK,* CLAUS U. BRUN* AND HOMER W. SMITH. *New York Univ.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Lost and Found Articles

Inqire at the Federation Office, Conrad Hilton Hotel.

Protein Purification and Properties

TUESDAY, 9:00 A.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: J. D. Ferry

905. Fractionation of swine follicle stimulating hormone. SANFORD L. STEELMAN, WILLIAM A. LAMONT, WILLIAM A. DITTMANN AND ERVIN J. HAWRYLEWICZ (intr. by EDWIN E. HAYS). *Armour Labs.*

724. Serial crystallization of proteins Concanavalin A and Concanavalin B. STACEY F. HOWELL. *Kirksville College of Osteopathy and Surgery.*

690. Purification of renin substrate. ARDA ALDEN GREEN. *Cleveland Clinic Fndn.*

600. Purification and characterization of angiotonin. F. MERLIN BUMPUS (intr. by IRVINE H. PAGE). *Cleveland Clinic Fndn.*

786. Denaturation of bovine serum albumin. MILTON LEVY AND ROBERT C. WARNER. *New York Univ.*

1545. Oxygen uptake by proteins during alkaline denaturation. LEON L. GERSHBEIN, BOGUSLAW KROTOSZYNSKI, J. A. LABOW AND M. J. BRUNNER (intr. by RICHARD J. WINZLER). *Univ. of Illinois College of Medicine.*

608. Interaction of dinitrophenyl derivatives with bovine serum albumin. MARY E. CARSTEN AND HERMAN N. EISEN (intr. by NORTON NELSON). *New York Univ. Post-Grad. Med. School.*

753. Reduction of disulfide linkages in pepsin and pepsinogen. H. L. KERN AND ROGER M. HERRIOTT (intr. by W. M. CLARK). *Johns Hopkins School of Hygiene and Public Health.*

924. Electrophoretic properties of oxytocin and vasopressin. STERLING P. TAYLOR, JR.* VINCENT DU VIGNEAUD AND HENRY G. KUNKEL.* *Cornell Univ. Med. College and Rockefeller Inst.*

389. Studies on collagenases. EUGENE D. ROSENBLUM, WALTER TROLL AND SOL SHERRY (intr. by MARTIN B. MACHT). *May Inst. for Med. Research.* (Physiol.).

Coenzymes

TUESDAY, 9:00 A.M.—CONRAD HILTON, WEST BALLROOM

Chairman: F. Schlenk

23. Effect of coenzyme I on oxidation of succinic acid by tissue homogenates. S. B. BARKER. *Med. College of Alabama and Univ. of Alabama School of Dentistry.* (Physiol.).

425. Decomposition products of diphosphopyridine nucleotide inactivated by ultraviolet light. MARIA SERAYDARIAN AND ARTHUR I. COHEN (intr. by DAVID RAPPORT). *Tufts College Med. School.* (Physiol.).

847. Pyridine nucleotide partition in red blood cells. JOHN G. REINHOLD, ALICE F. HOGANS* AND LEE M. HERSHENSON.* *Univ. of Pennsylvania Hosp.*

945. Phosphokinases for synthesis of triphosphopyridine nucleotide and coenzyme A in pigeon liver. T. P. WANG (intr. by NATHAN O. KAPLAN). *Johns Hopkins Univ.*

726. Oxidation-reduction forms of coenzyme A. FRANK M. HUENNEKENS AND ROBERT E. BASFORD.* *Univ. of Washington.*

888. Metabolic functions of coenzyme III in animal tissues. THOMAS P. SINGER AND EDNA B. KEARNEY.* *Univ. of Wisconsin.*

730. Oxidation of vitamin B_6 derivatives. JERARD HURWITZ (intr. by LOUIS PILLEMER). *Western Reserve Univ. School of Medicine.*

Blood Coagulation

TUESDAY, 9:00 A.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: W. H. Seegers

293. Activation of purified prothrombin in concentrated sodium citrate solution. L. LORAND,* NORMA ALKJAERSIG* AND WALTER H. SEEGERS. *Wayne Univ. College of Medicine.* (Physiol.).

946. Studies on accelerators of prothrombin conversion. ARNOLD G. WARE AND MERLE L. LEWIS.* *Univ. of Southern California School of Medicine and Los Angeles County Hosp.*

685. SPCA: An essential factor for prothrombin conversion. ROBERT GOLDSTEIN,* ANNE G. LE BOLLOC'H* AND BENJAMIN ALEXANDER. *Beth Israel Hosp. and Harvard Med. School.*

67. Isolation, characterization and partial purification of plasma thromboplastin. EDMUND W. CAMPBELL* AND MARIO STEFANINI. *New England Med. Center* (Physiol.).

731. Activation of thromboplastinogen by thrombin. CLARA V. HUSSEY,* ERNST EPSTEIN* AND ARMAND J. QUICK. *Marquette Univ. School of Medicine.*

774. Evidence of a thromboplastin inhibitor in blood. GERARD F. LANCHANTIN* AND JOHN B. FIELD. *Univ. of Southern California School of Medicine and Los Angeles County Hosp.*

660. Action of 'thromboplastinase' on tissue thromboplastic components. D. FELDMAN, F. E. KAPLAN AND D. R. MERANZE (intr. by C. RIEGEL). *Albert Einstein Med. Center.*

751. Effect of calcium on dissociation of intermediate polymers of fibrinogen. SIDNEY KATZ,* SIDNEY SHULMAN,* IGNACIO TINOCO, JR.,*

IRWIN H. BILLICK,* KURT GUTFREUND* AND JOHN D. FERRY. *Univ. of Wisconsin.*

1548. Action of thrombin on fibrinogen. K. LAKI (intr. by SIMON BLACK). *Natl. Insts. of Health.*

Carbohydrate Chemistry

TUESDAY, 9:00 A.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: H. G. Wood

734. Simple ultrasensitive spectropolarimeters. A. KESTON AND JOSEPH LOSPALLUTO.* *New York Univ. College of Medicine.*

849. Photometric determination of pentoses with thiobarbituric acid. EUGENE W. RICE (intr. by VICTOR E. LEVINE). *Creighton Univ.*

714. Reaction of anthrone with carbohydrates applied to studies of glycolysis. DAVID L. HILL, KENNETH I. HAWKINS, AND JOSEPH P. STRASSER (intr. by FRED W. OBERST). *Chemical Corps Med. Labs.*

863. Chemistry and metabolism of phosphoric esters by paper chromatography. GEORGE ROUSER AND MARTIN MORRISON (intr. by ROBERT WITTER). *Univ. of Rochester School of Medicine.*

565. Ion exchange analysis of carbohydrate intermediates. GRANT R. BARTLETT. *Scripps Metabolic Clinic.*

674. A fluorometric method for tricarboxylic cycle acids following chromatographic separation: Application to studies using labelled metabolites. CHARLES E. FROHMAN (intr. by ARTHUR H. SMITH). *Wayne Univ. College of Medicine.*

741. Fractional separation of amylose. B. JELINEK (intr. by ALBERT G. HOGAN). *Univ. of Alberta and Univ. of Missouri.*

836. Action of salivary amylase on oligosaccharides of amylose series. JOHN H. PAZUR (intr. by W. E. MILITZER). *Univ. of Nebraska.*

922. Post-mortem liberation of ribose in fish skeletal muscle. H. L. A. TARR. *Pacific Fisheries Exptl. Station.*

Special Functions

Tickets for group breakfasts, luncheons and dinners, Society dinners, the Biochemistry-Nutrition Smoker, and the events arranged by the Ladies Entertainment Committee, are on sale at the ticket desk, registration area, Conrad Hilton Hotel.

Tuesday Afternoon, April 7, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Inorganic—Chemistry and Metabolism

TUESDAY, 1:15 P.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: H. C. Hodge

479. Use of an ion exchange resin to determine total base of serum. JOHN C. VANATTA AND IVAN CUSHING (intr. by ROBERT W. LACKEY). *Southwestern Med. School.* (Physiol.).

607. Photometric determination of calcium. PAUL CARSON (intr. by D. D. VAN SLYKE). *Atomic Bomb Casualty Commission, and Brookhaven Natl. Lab.*

693. Calcium and phosphate in human urine. ISIDOR GREENWALD. *New York Univ. College of Medicine.*

887. Dietary restrictions and mobilization of 'stable' calcium fraction of the skeleton. LEON SINGER* AND W. D. ARMSTRONG. *Univ. of Minnesota.*

893. Composition of the mineral deposited in *in vitro* calcification in relation to fluid composition. ALBERT E. SOBEL, ALBERT HIRSCHMAN,* HARRY GOLDENBERG,* EMANUEL SCHMERZLER* AND I. FANKUCHEN.* *Jewish Hosp. of Brooklyn; New York State Univ. College of Medicine; and Polytechnic Inst. of Brooklyn.*

1551. Surface effects on solubility of bone salt. GEORGE J. LEVINSKAS (intr. by HAROLD C. HODGE). *Univ. of Rochester School of Medicine.*

772. Exchange of labeled phosphate with calcium phosphate precipitates formed from serum salt solutions. A. C. KUYPER. *Wayne Univ. College of Medicine.*

748. Combination of calcium with connective tissue. NORMAN R. JOSEPH, MILTON B. ENGEL* AND HUBERT R. CATCHPOLE.* *Univ. of Illinois, Colleges of Pharmacy, Dentistry and Medicine.*

653. Effect of age on histochemical characterization of hyaline cartilages. LILLIAN EICHELBERGER AND MICHAEL ROMA.* *Univ. of Chicago.*

1212. Age increase in fluoride content in human bone. FRANK A. SMITH, DWIGHT E. GARDNER AND HAROLD C. HODGE. *Univ. of Rochester School of Medicine.* (Pharmacol.)

828. Age as a factor in sodium and potassium concentrations of stimulated and unstimulated mixed human saliva. WILLIAM NIEDERMEIER (intr. by EMMETT B. CARMICHAEL). *Med. College and School of Dentistry, Univ. of Alabama, and Hillman Hosp.*

482. Recovery of I^{131} in iodide microanalysis. LESTER VAN MIDDLESWORTH AND JOSEPH T. TRUEMPER.* *Univ. of Tennessee* (Physiol.).

Steroids—Methods

TUESDAY, 1:15 P.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: T. F. Gallagher

717. Preparation of 16α-hydroxy-20-ketosteroids. H. HIRSCHMANN, FRIEDA B. HIRSCHMANN* AND JOHN W. CORCORAN.* *Western Reserve Univ.*

621. Dioxane-acid hydrolysis of ketosteroid conjugates. SAUL L. COHEN AND IRVING B. ONESON.* *Univ. of Minnesota Med. School.*

682. Colorimetric method for determination of urinary metabolites of progesterone or related substances: its application in studies of reproductive physiology. BETTY RUTH GLASGOW* AND DENNIS T. MAYER. *Univ. of Missouri.*

773. Application of the principle of gradient elution to the analysis of urinary ketosteroids. TAVORATH K. LAKSHMANAN* AND SEYMOUR LIEBERMAN. *Columbia Univ. College of P. & S.*

656. Partition coefficients of some neutral steroids in a quaternary biphasic solvent system. A nomographic approach. LEWIS L. ENGEL, JOYCE ALEXANDER,* PRISCILLA CARTER* AND JOANNE ELLIOTT.* *Mass. General Hosp. and Harvard Med. School.*

605. Use of thiosemicarbazide in the microestimation and recognition of steroid ketones. IAN E. BUSH (intr. by LEO T. SAMUELS). *Univ. of Utah. College of Medicine.*

1304. Separation of bile acids by column partition chromatography. E. H. MOSBACH, C. ZOMZELY AND F. E. KENDALL (intr. by M. BEVANS). *Columbia Univ. and Goldwater Mem. Hosp.* (Pathol.).

Symposium: Chemistry and Functions of Coenzyme A

TUESDAY, 1:15 P.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: Fritz Lipmann

Chairman's Introduction. Coenzyme A, past and future.

Enzymatic synthesis and structure of coenzyme A. G. DAVID NOVELLI. *Biochemical Research Lab., Massachusetts Gen. Hosp., Boston.*
Discussor: H. BEINERT. *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

Functional group of coenzyme A and its metabolic relations, especially in the fatty acid cycle. F. LYNEN. Chemisches-Lab., *Universität München, Germany.*
Discussor: EARL R. STADTMAN. Natl. Heart Inst., *Natl. Insts. of Health, Bethesda, Md.*

Role of coenzyme A in fatty acid metabolism. HENRY R. MAHLER. *Inst. for Enzyme Research, Univ. of Wisconsin, Madison.*

Succinyl coenzyme A and its role in phosphorylation. S. KAUFMAN. *Dept. of Pharmacology, N. Y. Univ. College of Medicine, New York City.*
Discussor: M. E. JONES. *Biochemical Research Lab., Massachusetts Hosp., Boston.*

Metabolism of thiol esters of glutathione. E. RACKER. *Dept. of Biochemistry, Yale Univ., New Haven, Conn.*
Discussor: JANEY HARTING. *Dept. of Pharmacology, New York Univ. College of Medicine, New York City.*

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONRAD HILTON HOTEL, GRAND BALLROOM

Program on page 477

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*
Members and guests of all Societies are cordially welcome.

Wednesday Morning, April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*

For complete institutional connection and address, see Abstract, Part I.

Growth and Protein Synthesis

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: C. B. Anfinsen, Jr.

620. $C^{14}O_2$ fixation during amphibian development. S. COHEN (intr. by C. CARRUTHERS). *Washington Univ. Med. School.*

856. Hepatic and extrahepatic regulation of serum protein metabolism. SIDNEY ROBERTS AND ROBERT BRUNISH.* *School of Medicine, Univ. of California at Los Angeles.*

976. Incorporation of radioactivity from DL-leucine-1-C^{14} into proteins of rat liver homogenates. PAUL C. ZAMECNIK. *Harvard Univ. and Massachusetts Gen. Hosp.*

878. Incorporation of radioactive lysine into protein. RICHARD SCHWEET* AND HENRY BORSOOK. *California Inst. of Technology.*

886. Biosynthesis of adolase and glyceraldehyde-3-phosphate dehydrogenase. MELVIN V. SIMPSON* AND SIDNEY F. VELICK. *Washington Univ. School of Medicine.*

961. Distribution of methionine-S^{35} during healing of experimental wounds. MARTIN B. WILLIAMSON AND HERBERT J. FROMM (intr. by S. BRODY). *Loyola Univ. School of Medicine.*

796. Histidine assimilation and dissimilation in a histidineless mutant of *Aerobacter aerogenes*. BORIS MAGASANIK. *Harvard Med. School.*

566. Effects of growth hormone and testosterone propionate on rates of protein degradation and protein loss. PAUL D. BARTLETT. *Ford Inst. for Med. Research.*

569. Conjoint effects of pyridoxine deficiency and anterior pituitary growth hormone administration in the rat. J. R. BEATON,* J. BEARE,* F. SMITH* AND E. W. MCHENRY. *Univ. of Toronto.*

Chemistry and Metabolism of Purines and Related Compounds—I

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: G. B. Brown

1541. New nucleotide polyphosphates from rabbit liver. JACOB SACKS AND LEO LUTWAK.* *Univ. of Arkansas and Brookhaven Natl. Lab.* (Physiol.).

755. Ribose phosphates derived from isomeric adenylic acids a and b. J. X. KHYM,* W. E. COHN, E. VOLKIN* AND D. G. DOHERTY.* *Oak Ridge Natl. Lab.*

667. Localization of the phosphate moiety in isomeric pyrimidine nucleotides. JACK J. FOX AND LIEBE F. CAVALIERI (intr. by GEORGE BOSWORTH BROWN). *Sloan-Kettering Inst.*

949. Metabolism of several isomers of adenine and guanine pentose nucleotides in the rat. HERBERT WEINFELD* AND PAUL M. ROLL. *Sloan-Kettering Inst.*

767. Enzymatic conversion of hypoxanthine to inosinic acid. EDWARD D. KORN* AND JOHN M. BUCHANAN. *Univ. of Pennsylvania School of Medicine.*

692. Conversion of 5-amino-4-imidazolecarboxamide riboside to its phosphoribotide and to inosinic acid. G. ROBERT GREENBERG. *Western Reserve Univ. School of Medicine.*

837. Activation of formate for purine synthesis. RICHARD A. PEABODY (intr. by J. A. MUNTZ). *Western Reserve Univ. School of Medicine.*

910. 4-Amino-5-imidazolecarboxamide and the anaerobic metabolism of glucose and formate. RICHARD C. STEWART* AND M. G. SEVAG. *Univ. of Pennsylvania School of Medicine.*

Enzymes—General I

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: C. B. Sumner

944. Aldehydes as sulfhydryl reagents. GEORGE WALD, CHARLES GREENBLATT* AND PAUL K. BROWN.* *Harvard Univ.*

769. Enzyme specificity and enzyme mechanism. D. E. KOSHLAND, JR. AND SYLVIA S. STEIN (intr. by J. R. KLEIN). *Brookhaven Natl. Lab.*

50. Effects of modifiers and of enzyme multivalency upon the steady state catalyzed reaction rate. JEAN BOTTS AND MANUEL MORALES. *Naval Med. Research Inst.* (Physiol.).

582. Fumarase. Specific ion interactions with the substrates and their effect on initial rates and on the apparent equilibrium constant. ROBERT M. BOCK, CARL FRIEDEN AND ROBERT A. ALBERTY (intr. by J. W. WILLIAMS). *Univ. of Wisconsin.*

775. Stimulation of enzyme formation by inductor

mixtures. OTTO E. LANDMAN (intr. by N. H. HOROWITZ). *California Inst. of Technology.*

909. Heat resistant enzyme from bacterial spores. BABETTE TAYLOR STEWART (intr. by R. E. JOHNSON). *Univ. of Illinois.*

940. Effect of alkali metal ions on tissue acetokinase activity. R. W. VON KORFF AND T. VANDERWAL GLAMAN (intr. by DAVID GLICK). *Univ. of Minnesota.*

918. Effect of various buffers on the optimum pH of the 'ATPase' of liver mitochondria. MARJORIE A. SWANSON. *Bowman Gray School of Medicine.*

771. Purification of ATP-creatine transphosphorylase. STEPHEN A. KUBY,* LAFAYETTE NODA* AND HENRY A. LARDY. *Univ. of Wisconsin.*

813. Enzymatic hydroxamic acid formation from aspartic acid. ALEX MILLER* AND H. WAELSCH. *New York State Psychiatric Inst.*

Lipoproteins and Cholesterol

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, WEST BALLROOM

Chairman: H. J. Deuel

890. Study of lipoprotein fractions by paper electrophoresis. ELIZABETH R. B. SMITH, T. M. CRAWFORD,* MERA R. JETTON* AND E. L. DURRUM.* *Army Med. Service Grad. School.*

764. Electrophoretic mobility of serum proteins and lipids in arteriosclerosis. ALFRED E. KOEHLER AND ELSIE HILL.* *Sansum Clinic Research Fndn. and Santa Barbara Cottage Hosp.*

597. *In vitro* formation of lipemia clearing factor. RAY K. BROWN AND DOROTHY L. KAUFFMAN (intr. by CHRISTIAN B. ANFINSEN). *Nat. Heart Inst.*

747. Effect of a cholesterol-free brain fraction against diet-induced atherosclerosis. RICHARD J. JONES, SUMNER C. KRAFT, EUGENE L. BALTER AND SHELDON HUFFMAN (intr. by MORRIS A. LIPTON). *Univ. of Chicago.*

663. Effect of portal vein infusion of sodium acetoacetate, sodium acetate, saline, and other agents on the circulating blood cholesterol of the intact unanesthetized rat. BERNARD FISHER* AND HARRY M. VARS. *Univ. of Pennsylvania and Univ. of Pittsburgh.*

548. Dietary fat and serum cholesterol. JOSEPH T. ANDERSON AND ANCEL KEYS. *Univ. of Minnesota and Minnesota Mental Health Research Lab.*

598. Factors affecting the biosynthesis of cholesterol from acetate by rat liver homogenates. NANCY L. R. BUCHER, NAOMI H. MCGOVERN, RUTH KINGSTON AND MARGARET H. KENNEDY (intr. by ERIC G. BALL). *Massachusetts Gen. Hosp.*

1547. A new functional role of ascorbic acid. C. G. KING, HELEN B. BURCH,* ROBERT R. BECKER* AND LOTHAR SALOMON.* *Columbia Univ.*

830. Inhibition of cholesterol absorption by structural analogs. JERRE L. NOLAND (intr. by D. B. DILL). *Chemical Corps Med. Labs.*

752. Isolation of a crystalline cholesteryl ester from normal plasma. PATRICIA KEEGAN* AND R. GORDON GOULD. *Los Alamos Scientific Lab.*

Bacteriophage and Related Topics

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: W. M. Stanley

841. Evaluation of procedures for estimating diverse mutations in bacteria following application of mutagens. DARRELL PRATT* AND ORVILLE WYSS. *Univ. of Texas.*

799. Metabolism of ribonucleic acid in normal and bacteriophage-infected *Escherichia coli.* LIONEL A. MANSON (intr. by J. O. LAMPEN). *Western Reserve Univ. School of Medicine.*

744. Nucleic acids in viral infected tissues. R. BERNAL JOHNSON (intr. by W. WILBUR ACKERMANN). *Univ. of Michigan.*

770. A desoxyribonuclease inhibitor and bacteriophage infection. LLOYD N. KOZLOFF. *Univ. of Chicago.*

604. Metabolic changes resulting from bacteriophage infection. K. BURTON (intr. by E. A. EVANS, JR.). *Univ. of Chicago.*

586. Inhibition of phage formation in a lysogenic organism by fumaric acid and its derivatives. ERNEST BOREK. *VA Hosp., Brooklyn.*

Cancer

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: J. P. Greenstein

696. Metabolism of 2-benzoylaminofluorene-9-C^{14} and 2-acetylaminofluorene-9-C^{14} in the rat. HELMUT R. GUTMANN AND JOHN H. PETERS.* *VA Hosp., Univ. of Minnesota and Univ. of Florida.*

950. Fractionation and identification of some metabolites of 2-acetylaminofluorene-9-C^{14}. JOHN H. WEISBURGER,* ELIZABETH K. WEISBURGER,* HERBERT A. SOBER AND HAROLD P. MORRIS. *Natl. Insts. of Health*

618. Effect of dietary copper upon azo dye carcinogenesis and upon some liver components. C. C.

CLAYTON, H. J. KING, AND J. D. SPAIN, JR. (intr. by J. C. FORBES). *Med. College of Virginia.*

869. Relation of basicity and molecular dimensions of the 4-aminoazobenzenes to their carcinogenicity. EUGENE SAWICKI AND FRANCIS E. RAY (intr. by HAROLD P. MORRIS). *Univ. of Florida.*

563. Carboxypeptidases and carboxypeptidase inhibitors in normal and tumor-bearing animals. JOHN C. BALLIN* AND ROBERT N. FEINSTEIN. *USAF Radiation Lab. and Univ. of Chicago.*

881. Effects of tumor on normal tissue metabolism in tumor bearing rats: IV. Metabolite inhibition in the presence of Flexner-Jobling and lymphosarcoma. IRVING R. SHERMAN AND EMILY P. CHAFFEE (intr. by GEORGE R. COWGILL). *Yale Univ. School of Medicine.*

602. Effects of zinc insulin on tumor metabolism and the Pasteur effect. DEAN BURK, KENT WIGHT* AND MARK WOODS.* *Natl. Insts. of Health.*

809. Uptake of labeled methionine by pituitary and mammary tissue of C3H mice. JACKLYN B. MELCHIOR AND ARTHUR H. GOLDKAMP (intr. by IRVING M. KLOTZ). *Loyola Univ. Grad. School and School of Medicine.*

804. Utilization of substrates by Ehrlich's mouse ascites carcinoma cells. RALPH W. MCKEE AND KNUD K. LONBERG-HOLM.* *New England Deaconess Hosp. and Harvard Med. School.*

592. Inhibition of respiration by glucose in Ehrlich's mouse ascites carcinoma cells. MYRON BRIN (intr. by H. C. TRIMBLE). *New England Deaconess Hosp.*

649. Excretion of amino acids in malignant diseases. CHARLES H. EADES, JR. (intr. by T. P. NASH, JR.). *Univ. of Tennessee.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Lost and Found Articles

Inquire at the Federation Office, Conrad Hilton Hotel.

Wednesday Afternoon, April 8, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see Abstract, Part I.

Cytochemistry

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: A. L. Dounce

542. Cholesterol distribution in ultracentrifugal fractions of cholesterol-fed rat liver. ROSLYN B. ALFIN-SLATER, LESLIE I. RICE* AND MICHAEL C. SCHOTZ.* *Univ. of Southern California School of Medicine.*

883. Release from mitochondria of acid-soluble material absorbing at 260 mμ. PHILIP SIEKEVITZ* AND VAN R. POTTER. *Univ. of Wisconsin.*

838. Macromolecular nucleoprotein particles of mammalian cytoplasm. MARY L. PETERMANN, NANCY A. MIZEN* AND MARY G. HAMILTON.* *Sloan-Kettering Inst.*

710. Fractionation of rat liver microsomes. S. J. HAZAN,* S. A. SINGAL, V. P. SYDENSTRICKER AND JULIA M. LITTLEJOHN.* *Med. College of Georgia.*

628. Chemical fractions derived from nuclei and cytoplasmic particles isolated by two new specific gravity methods. R. DUNCAN DALLAM* AND LLOYD E. THOMAS. *Univ. of Missouri.*

639. Yeast phosphatase. Immunological method of determining its location in the cell. MELVA J. DERRICK, RUTH E. MILLER AND M. E. SEVAG (intr. by M. FAY). *Woman's Med. College of Pennsylvania and Univ. of Pennsylvania School of Medicine.*

859. Observations on intracellular distribution of arginase in rat liver. OTTO ROSENTHAL. *Univ. of Pennsylvania School of Medicine.*

646. Cytochrome oxidase and succinic dehydrogenase of isolated liver cell nuclei. ALEXANDER L. DOUNCE, ERNEST R. M. KAY* AND SYDNEY PATE.* *Univ. of Rochester School of Medicine.*

567. Fractionation of desoxyribonucleoproteins of cell nuclei. JAY BARTON II (intr. by CHARLES R. DAWSON). *Columbia Univ.*

810. Nucleic acids in individual nuclei of normal and neoplastic tissues of the mouse: Microabsorption and interferometric analysis. ROBERT C. MELLORS AND JOHN HLINKA.* *Sloan-Kettering Inst.*

78. Ion antagonism in glycolysis by cell-free bacterial extracts. JEAN A. CLARK AND ROBERT A. MACLEOD (intr. by E. C. BLACK). *Queen's Univ.* (Physiol.).

Chemistry and Metabolism of Purines and Related Compounds—II

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: R. D. Hotchkiss

686. Biosynthesis of adenine nucleotides from adenine. EUGENE GOLDWASSER (intr. by HERMAN M. KALCKAR). *Copenhagen Univ.*

650. *In vivo* studies on the acid-soluble precursors of nucleic acid purines. MARY EDMONDS* AND G. A. LEPAGE. *Univ. of Wisconsin.*

797. Incorporation of 8-azoguanine into nucleic acids. H. GEORGE MANDEL,* PIERRE-EM. CARLÓ* AND PAUL K. SMITH. *George Washington Univ. School of Medicine.*

956. Chromatographic evidence for the incorporation of 2,6-diaminopurine into the nucleoside phosphates of the mouse. GLYNN P. WHEELER AND HOWARD E. SKIPPER (intr. by C. CHESTER STOCK). *Southern Research Inst.*

655. Purine metabolism of a 6-mercaptopurine-resistant strain of *Lactobacillus casei*. GERTRUDE B. ELION AND SAMUEL SINGER.* *Wellcome Research Labs.*

900. Uric acid synthesis in the dog. EDRA L. SPILMAN (intr. by A. E. AXELROD). *Western Reserve Univ.*

931. Enzymatic oxidation of uric acid. ALICE L. TUTTLE* AND PHILIP P. COHEN. *Univ. of Wisconsin.*

972. Uricolysis in man, following intravenous administration of uric acid-1,3-N^{15}. JAMES B. WYNGAARDEN,* JEAN D. BENEDICT* AND DEWITT STETTEN, JR. *Public Health Research Inst. of New York.*

Enzymes—General II

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: E. Bueding

200. Competitive inhibition of dihydroxyphenylalanine (DOPA) decarboxylase. WILLIAM HARTMAN* AND WILLIAM G. CLARK. *Univ. of California School of Medicine and Medical Research Service Center, VA Los Angeles.* (Physiol.).

934. Mechanism of action of oxalacetic carbox-

ylase from liver. M. F. UTTER AND KIYOSHI KURAHASHI.* *Western Reserve Univ. School of Medicine.*

919. Bile salts and cholesterol esterase activity. LEON SWELL (intr. by C. R. TREADWELL). *VA Center, Martinsburg.*

870. Serine phosphoric acid from diisopropylphosphoryl derivatives of eel cholinesterase. N. K. SCHAFFER,* S. C. MAY, JR.* AND W. H. SUMMERSON. *Chemical Corps Med. Labs.*

577. Substances enhancing the activity of β-glucuronidase. PETER BERNFELD, HELEN C. BERNFELD* AND WILLIAM H. FISHMAN. *Tufts College Med. School.*

544. Serum tributyrinase. IV. Studies on substrate specificity and ion activation. C. ALPER, P. P. POLAKOFF, JR. AND E. ALEXANDER (intr. by J. F. MCCLENDON). *Hahnemann Med. College.*

659. Copper inactivation of lysozyme. R. E. FEENEY, L. R. MACDONNELL* AND E. D. DUCAY.* *USDA Western Regional Research Lab.*

857. Brain purine nucleoside phosphorylase: quantitative histochemical studies. ELI ROBINS, DAVID E. SMITH AND RICHARD E. MCCAMAN (intr. by OLIVER H. LOWRY). *Washington Univ. Med. School.*

903. Enzymatic and chemical oxidation of phosphoramides to biologically active phosphoramide oxides. MARK A. STAHMANN, J. E. CASIDA* AND T. C. ALLEN.* *Univ. of Wisconsin.*

930. Characterization of streptokinase activated plasminogen (plasmin) by synthetic substrates. WALTER TROLL, SOL SHERRY AND JOHN WACHMAN (intr. by MILAN A. LOGAN). *Jewish Hosp. and Univ. of Cincinnati College of Medicine.*

Protein Chemistry—Methods

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, WEST BALLROOM

Chairman: J. T. Edsall

257. X-ray diffraction study of selected types of insulin fibrils. W. L. KOLTUN* AND D. F. WAUGH. *Massachusetts Inst. of Technology* (Physiol.).

41. Effect of hydrogen ion and protein concentration on the fluorescence of the dye, vasoflavine. JOSEPH J. BETHEIL,* ROSE MOUKOUS* AND JORGEN U. SCHLEGEL. *Univ. of Rochester, School of Medicine.* (Physiol.).

25. Effect of dilution and dialysis on interaction of blood serum proteins. HARRY N. BARNET AND ELOISE JAMESON (intr. by CHESTER HYMAN). *Univ. of Southern California School of Medicine* (Physiol.).

705. The interfacial tension of protein solutions. FELIX HAUROWITZ, PHYLLIS BOUCHER* AND MARTHA DICKS.* *Indiana Univ.*

716. Chromatography of proteins. Chymotrypsinogen-α. C. H. W. HIRS (intr. by STANFORD MOORE). *Rockefeller Inst.*

575. Enzymatic removal of oxygen for polarography and related methods. REINHOLD BENESCH AND RUTH E. BENESCH.* *State Univ. of Iowa.*

806. Fractionation of rat plasma proteins. JOHN W. MEHL AND ALAN KELTZ.* *Univ. of Southern California.*

927. Fractionation of insulin by electrophoresis-convection. S. N. TIMASHEFF AND J. G. KIRKWOOD (intr. by J. S. FRUTON). *Yale Univ.*

978. Paper electrophoresis of α, β, and γ caseins. GUNTER ZWEIG* AND RICHARD J. BLOCK. *The Borden Co.*

Steroids—Sex Hormones

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: E. A. Doisy

1476. Metabolic fate of cholesterol, 7-ketocholesterol and 7-hydroxycholesterol in the rabbit. F. E. KENDALL, E. H. MOSBACH,* L. L. ABELL* AND W. MEYER.* *Columbia Univ. and Goldwater Mem. Hosp.* (Immunol.).

571. Radioactive estrogens in humans. CHARLES T. BEER,* KONRAD DOBRINER,* MAXWELL LEIGH EIDINOFF* AND T. F. GALLAGHER. *Sloan-Kettering Inst.*

589. Hydrolysis of the metabolites of cortisone in humans. H. LEON BRADLOW,* THEODORE H. KRITCHEVSKY, E. R. KATZELNELLENBOGEN,* KONRAD DOBRINER* AND T. F. GALLAGHER. *Sloan-Kettering Inst.*

676. Urinary steroids after testosterone and progesterone in humans. DAVID K. FUKUSHIMA, MADELEINE B. STOKEM,* H. LEON BRADLOW,* THEODORE H. KRITCHEVSKY, LEON HELLMAN,* KONRAD DOBRINER* AND T. F. GALLAGHER. *Sloan-Kettering Inst.*

732. Metabolic studies of 17-methyl-C^{14}-testosterone. PAUL M. HYDE,* WILLIAM H. ELLIOTT AND EDWARD A. DOISY. *St. Louis Univ. School of Medicine.*

880. Metabolic studies of progesterone-21-C^{14}. FRANCES N. H. SHEN* AND E. A. DOISY, JR. *St. Louis Univ. School of Medicine.*

763. *In vitro* metabolism of androgens by guinea pig tissues. CHARLES D. KOCHAKIAN, DAN NALL* AND GEORGE STIDWORTHY.* *Oklahoma Med. Research Inst.*

970. Metabolism of testosterone by human prostatic tissue. HERBERT H. WOTIZ AND HENRY M. LEMON (intr. by JOSEPH M. LOONEY). *Boston Univ. School of Medicine.*

939. Effects of estradiol on human placenta ho-

mogenate metabolism. CLAUDE A. VILLEE, DWAIN D. HAGERMAN,* RUTH LAPLACE* AND BARBARA QUARLES.* *Harvard Med. School.*

Lipid Metabolism

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: W. R. Bloor

793. Determination of ethanolamine in urine. J. MURRAY LUCK AND ALAN A. WILCOX.* *Stanford Univ.*

643. Action of cortisone and desoxycorticosterone on the plasma lipides of adrenalectomized dogs. N. R. DILUZIO, MORIS L. SHORE AND D. B. ZILVERSMIT (intr. by D. B. MORRISON). *Univ. of Tennessee.*

706. Mode of biosynthesis of a glycolipid. GEORGE HAUSER* AND MANFRED L. KARNOVSKY. *Harvard Med. School.*

805. Incorporation of acetate into the arachidonate molecule. JAMES F. MEAD, GUNTHER STEINBERG* AND DAVID R. HOWTON.* *Univ. of California School of Medicine, Los Angeles.*

720. Effect of oxidized linoleate preparations upon fat deficient rats. RALPH T. HOLMAN AND SHELDON I. GREENBERG.* *Univ. of Minnesota.*

819. Studies on fat absorption after oral administration of a dioleyl-deuteriostearin and glycerol-C^{14}. MARGARET G. MOREHOUSE AND WLADIMIR SKIPSKI.* *Univ. of Southern California School of Medicine.*

848. Phospholipide as an obligatory intermediate for the absorption of fatty acids and monoglycerides. RAYMOND REISER (intr. by CARL M. LYMAN). *Texas Agric. Exper. Station.*

1142. Fecal fat levels in bile duct ligated rats. D. F. MAGEE (intr. by J. M. DILLE). *Univ. of Washington* (Pharmacol.).

831. Interrelationships of fecal, body and dietary fats. LEONARD N. NORCIA* AND WALTER O. LUNDBERG. *Univ. of Minnesota.*

787. Fecal lipids from humans maintained on a diet very low in fat. GEORGE T. LEWIS AND HELEN C. PARTIN.* *Dade County Med. Research Fndn.*

Biochemistry Society Business Meeting

WEDNESDAY, 4:00 P.M.—CONRAD HILTON, NORTH BALLROOM

Biochemistry–Nutrition Smoker

WEDNESDAY, 9:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Tickets available at the ticket desk, Conrad Hilton Hotel.

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, part I.

Carbohydrate Metabolism—I

THURSDAY, 9:00 A.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: C. F. Cori

625. Phosphorylation of carbohydrates by mammary gland. E. M. CRAINE,* W. J. RUTTER* AND R. G. HANSEN. *Univ. of Illinois.*

872. Synthesis of lactose in rabbits studied with C^{14}-labeled compounds. P. SCHAMBYE,* H. G. WOOD AND G. POPJÁK.* *Royal Vet. College, Copenhagen, Western Reserve Univ. and Natl. Inst. Med. Research, London.*

895. Some properties of brain hexokinase. ALBERTO SOLS AND ROBERT K. CRANE (intr. by CARL F. CORI). *Washington Univ. School of Medicine.*

599. Hexokinase activity of *Schistosoma mansoni*. ERNEST BUEDING AND JOAN MACKINNON.* *Western Reserve Univ. School of Medicine.*

583. Serum phosphohexose isomerase. OSCAR BODANSKY. *Sloan-Kettering Inst.*

560. Preparation and properties of phosphoriboisomerase. BERNARD AXELROD AND ROSIE JANG.* *USDA Western Regional Research Lab.*

632. Enzymatic formation of ribulose-5-phosphate from 'active aldehyde' and triose phosphate. G. DE LA HABA,* I. G. LEDER* AND E. RACKER. *Yale Univ.*

721. Role of sedoheptulose phosphate in carbohydrate metabolism. B. L. HORECKER, P. Z. SMYRNIOTIS* AND H. KLENOW.* *Natl. Insts. of Health.*

Metabolism of Pyrimidines and Related Compounds

THURSDAY, 9:00 A.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: D. W. Wilson

915. Biochemical effects of penicillin on nucleotide and nucleic acid metabolism in *Staphylococcus aureus* and *Lactobacillus helveticus 335*. JACK L. STROMINGER (intr. by ELSE O. KEILES). *Natl. Insts. of Health.*

687. Glycuronic acid analogues of pyrimidine nucleosides. IRVING GOODMAN (intr. by GEORGE H. HITCHINGS). *Wellcome Research Labs.*

1180. Biosynthesis of the desoxyriboside of a thymine analogue (Azathymidine). WILLIAM H. PRUSOFF (intr. by ARNOLD D. WELCH). *Western Reserve Univ. School of Medicine.* (Pharmacol.)

671. Enzymatic synthesis of C^{14}-thymidine. MORRIS FRIEDKIN. *Washington Univ.*

821. Incorporation of glycine-2-C^{14} and orotic-6-C^{14} acid by surviving uterine segments. GERALD C. MUELLER AND AILENE HERRANEN.* *Univ. of Wisconsin Med. School.*

789. Enzymatic synthesis and breakdown of orotic acid. IRVING LIEBERMAN* AND ARTHUR KORNBERG. *Natl. Insts. of Health.*

729. Uridine-5-phosphate compounds as intermediates in the incorporation of orotic acid into RNA. ROBERT B. HURLBERT (intr. by JAMES A. MILLER). *Univ. of Wisconsin.*

397. *In vitro* utilization of 2-C^{14}-uracil and thiouracil. ROBERT J. RUTMAN,* ABRAHAM CANTAROW AND KARL E. PASCHKIS. *Jefferson Med. College* (Physiol.).

Enzymes—Nucleolytic and Proteolytic

THURSDAY, 9:00 A.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: E. L. Smith

715. Purification of nucleases from spleen and intestinal mucosa. R. J. HILMOE* AND LEON A. HEPPEL. *Natl. Insts. of Health.*

827. Effects of carboxypeptidase on the chymotrypsin system. HANS NEURATH AND JULES A. GLADNER.* *Univ. of Washington.*

1542. Peptidase activity of beef thyroid tissue. BENJAMIN WEISS (intr. by DAVID J. SANDWEISS). *Harper Hosp.* (Physiol.).

742. Peptide cofactors in enzyme proteolysis. A. C. JOHNSON* AND ROGER M. HERRIOTT. *Johns Hopkins Univ.*

629. Preparation and properties of crystalline prolidase from swine kidney. NEIL C. DAVIS* AND EMIL L. SMITH. *Univ. of Utah.*

591. A study of the effect of L-ascorbic acid on gastric digestion *in vitro*. ANDREW W. BREIDENBACH AND FRANCIS E. RAY (intr. by R. A. DUTCHER). *Univ. of Florida.*

651. Enzymatic and ultracentrifugal studies on components of α-chymotrypsin obtained after

prolonged electrophoresis. RICHARD EGAN (intr. by TH. WAGNER-JAUREGG). *Chemical Corps Med. Labs.*

739. Combination of diisopropyl fluorophosphate-inhibited trypsin with trypsin inhibitors. EUGENE F. JANSEN, ROSIE JANG* AND H. S. OLCOTT. *USDA Western Regional Research Lab.*

738. Reactions of cholinesterase and chymotrypsin with 0-ethyl, 0-*p*-nitrophenyl benzene thiophosphonate and its oxygen analog. BERNARD J. JANDORF AND EDWARD A. CROWELL.* *Chemical Corps Med. Labs.*

Amino Acid Chemistry

THURSDAY, 9:00 A.M.—CONRAD HILTON, WEST BALLROOM

Chairman: H. B. Vickery

967. Reaction of cyanide with cystine. JOHN L. WOOD AND SHIRLEY LUCILLE COOLEY.* *Univ. of Tennessee.*

590. Optical rotation of amino acid residues as middle pieces (endo position) in peptides. ERWIN BRAND. *Columbia Univ. College of P. & S.*

779. Conversion of methionine to the methyl sulfonium salt and isolation from protein hydrolysates. THEODORE F. LAVINE AND NORMAN F. FLOYD.* *Lankenau Hosp.*

835. Protein hydrolysis by ion exchange resin catalysis. JACK C. PAULSON AND F. E. DEATHERAGE (intr. by J. B. BROWN). *Ohio State Univ.*

420. Filter paper chromatography of the hydrolysates of rat serum proteins fractionated by filter paper electrophoresis. JULIUS SCHULTZ,* WILLIAM JAMISON* AND HARRY SHAY. *Temple Univ. School of Medicine.* (Physiol.).

570. Amino acid composition of protein from the dysentery amoeba, *Entamoeba histolytica.* CHARLES E. BECKER AND QUENTIN M. GEIMAN (intr. by HARRY G. DAY). *Harvard School of Public Health.*

644. Synthesis of DL, D, and L glyceryl amino acid derivatives. DAVID G. DOHERTY (intr. by JOHN R. TOTTER). *Oak Ridge Natl. Lab.*

803. Behavior of amino acids and some derivatives in simultaneous crossed-current ionography. H. J. MCDONALD AND M. C. URBIN (intr. by D. A. MACFADYEN). *Loyola Univ. Grad. School and School of Medicine.*

1549. A micromethod for the identification of substances on paper chromatograms. ELWOOD H. LABROSSE (intr. by ROGER J. WILLIAMS). *USAF School of Aviation Medicine.*

Steroids—Adrenal

THURSDAY, 9:00 A.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: R. I. Dorfman

737. Colorimetric determination of corticosteroid-like substances in the urine with blue tetrazolium (BT). JOSEPH L. IZZO AND ALFREDA M. GABIGA (intr. by WILLIAM S. MCCANN). *Univ. of Rochester School of Medicine.*

962. Corticosteroids of urine. HILDEGARD WILSON AND RICHARD FAIRBANKS (intr. by R. KEITH CANNAN). *New York Univ. College of Medicine.*

722. Bacterial glucuronidase and the quantitative determination of urinary corticosteroids. BENJAMIN N. HORWITT (intr. by A. M. ALTSCHUL). *Tulane Univ.*

948. Quantitative determination of 17-hydroxy-corticosteroids and 21-hydroxy-20 ketosteroids in the peripheral blood of humans before and after operative trauma. T. E. WEICHSELBAUM, H. W. MARGRAF* AND R. ELMAN.* *Washington Univ. School of Medicine.*

603. *In vivo* metabolism of hydrocortisone and 21-desoxycortisone. S. BURSTEIN,* K. SAVARD* AND R. I. DORFMAN. *Worcester Fndn. for Exptl. Biology.*

868. *In vivo* metabolism of adrenosterone. KENNETH SAVARD, SHLOMO BURSTEIN, HARRIS ROSENKRANTZ AND RALPH I. DORFMAN (intr. by MIKA HAYANO). *Worcester Fndn. for Exptl. Biology.*

454. Influence of ACTH upon progesterone transformation to corticosteroid, in perfused bovine adrenals. D. STONE,* E. GOBIEL,* M. FEINSTEIN* AND O. HECHTER. *Worcester Fndn. for Exptl. Biology and Boston Univ.* (Physiol.).

561. Metabolism of adrenal cortical hormones in the isolated perfused rat liver. LEONARD R. AXELROD* AND LEON L. MILLER. *Univ. of Rochester School of Medicine.*

815. Influence of adrenal steroids on tissue metabolism *in vitro.* ZELMA MILLER. *Children's Med. Center and Harvard Med. School.*

877. Effects of pregnane-3α, 17α, 21-triol-11,20-dione (tetrahydro Cpd. E) on biological activity and *in-vitro* metabolism of 17-hydroxy-11-dehydrocorticosterone (Cpd. E). JOHN J. SCHNEIDER. *Jefferson Med. College.*

Biological Oxidation

THURSDAY, 9:00 A.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: L. Hellerman

802. Oxidation of ferritin sulfhydryl groups by liver extracts. ABRAHAM MAZUR, GRETA

SANDER* AND EPHRAIM SHORR.* *Cornell Univ. Med. College and New York Hosp.*

657. Oxidation-reduction characteristics of thyroxine. H. E. EVERT (intr. by C. L. GEMMILL). *Univ. of Virginia Med. School.*

892. Relationships of cytochromes a and a_3. LUCILE SMITH (intr. by W. C. STADIE). *Univ. of Pennsylvania.*

1028. Effect of aeration on the cytochrome systems and respiratory activities of 'resting' yeasts. C. H. CHIN (intr. by L. PETERS). *Molteno Inst., Cambridge, England* (Pharmacol.).

942. Reduction of cytochrome oxidase. W. W. WAINIO. *Rutgers Univ.*

820. Prosthetic groups of hemoproteins. MARTIN MORRISON* AND ELMER STOTZ. *Univ. of Rochester School of Medicine.*

642. Xanthyl cytochrome-*c*: An inhibitor of cytochrome *c*. SHERMAN R. DICKMAN AND WAYNE L. WESTCOTT.* *Univ. of Utah College of Medicine.*

846. Kinetics of succinoxidase inhibition by antimycin A and by a naphthoquinone. ARNOLD E. REIF (intr. by E. C. MILLER). *Univ. of Wisconsin Med. School.*

826. Biological properties of ferrichrome. J. B. NEILANDS (intr. by F. H. CARPENTER). *Univ. of California, Berkeley.*

938. Photoautoxidation of ferrocytochrome *c* by sonic extracts of *Rhodospirillum rubrum*. L. P. VERNON* AND M. D. KAMEN. *Washington Univ. Med. School.*

Special Functions

Tickets for group breakfasts, luncheons and dinners, Society dinners, the Biochemistry-Nutrition Smoker, and the events arranged by the Ladies Entertainment Committee, are on sale at the ticket desk, registration area, Conrad Hilton Hotel.

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Thursday Afternoon, April 9, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Carbohydrate Metabolism II

THURSDAY, 1:15 P.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: S. Ochoa

467. Metabolism of glycerol and pyruvate by rat kidney slices. CHING TSENG TENG (intr. by HEBBEL E. HOFF). *Baylor Univ. College of Medicine.* (Physiol.).

564. Enzymatic carboxylation of phosphoenolpyruvate to oxalacetate. ROBERT S. BANDURSKI,* CLAIRE M. GREINER* AND JAMES BONNER. *California Institute of Technology.*

697. Mechanism of pyruvate and α-ketoglutarate dehydrogenase systems. L. P. HAGER,* JEAN D. FORTNEY,* AND I. C. GUNSALUS. *Univ. of Illinois.*

645. Lipoic acid functions: α-dicarbonyl oxidation by *Streptococcus faecalis*, 10C1. M. DOLIN (intr. by J. W. FOSTER). *Oak Ridge Natl. Lab.*

630. Coenzymatic functions of thiamine pyrophosphate and lipothiamide pyrophosphate. BETTY G. DEBUSK* AND LESTER J. REED. *Univ. of Texas.*

866. Succinyl CoA phosphokinase (S.C.P.). D. R. SANADI, H. HIFT* AND L. OUELLET.* *Univ. of Wisconsin.*

928. Formation of 'acetyl' from succinate by rabbit liver slices. YALE J. TOPPER. *Public Health Research Inst. of New York.*

800. Short term carbon dioxide fixation into succinate by liver homogenates. LAWRENCE M. MARSHALL AND FELIX FRIEDBERG. *Howard Univ. School of Medicine.*

666. An alternative pathway of citrate oxidation in yeast. E. C. FOULKES (intr. by F. F. HEYROTH). *May Inst. for Med. Research, Jewish Hosp. and Univ. of Cincinnati College of Medicine.*

633. Succinate decarboxylation reaction in *Propionibacterium*. E. A. DELWICHE,* E. F. PHARES* AND S. F. CARSON. *Cornell Univ. and Oak Ridge Natl. Lab.*

Oxidative Enzymes—I

THURSDAY, 1:15 P.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: H. A. Lardy

326. Apparent stimulation of aerobic phosphorylation by 2,4-dinitrophenol with indication of substrate phosphorylation. GILBERT H. MUDGE, S. W. STANBURY* AND HANS W. NEUBERG.* *Columbia Univ. College of P. & S.* (Physiol.).

728. Effect of inorganic and organic nitrites and nitrates on aerobic phosphorylation in liver mitochondria. F. EDMUND HUNTER, JR SHIRLEY KAHANA* AND LILLIAN FORD.* *Washington Univ. Med. School.*

718. On the inhibition of mitochondria phosphorylation by throxin. FREDERIC L. HOCH* AND FRITZ LIPMANN. *Massachusetts General Hosp. and Harvard Med. School.*

619. Adenylate kinase activity *in vivo*. FLORA-PEARL A. COBEY* AND PHILIP HANDLER. *Duke Univ. School of Medicine.*

952. Oxidation of choline-like substances by rat liver homogenates. IBERT C. WELLS. *State Univ. of New York.*

616. Enzymes of choline oxidation. J. ROGER CHRISTENSEN* AND LOUISE J. DANIEL. *Cornell Univ.*

913. Choline dehydrogenase activity and DPN content of rat livers following aminopterin injection. D. R. STRENGTH AND NELL I. MONDY (intr. by J. B. SUMNER). *Cornell Univ.*

532. Effect of aureomycin on dehydrogenase systems of the rat liver. HYMAN J. ZIMMERMAN AND FRED L. HUMOLLER (intr. by A. ROSS MCINTYRE). *Univ. of Nebraska College of Medicine and VA Hosp.* (Physiol.).

1543. Effect of homocysteine oxidation on choline oxidase (CO) activity. CHARLES ANGEL AND O. NEAL MILLER (intr. by D. BAILEY CALVIN). *Univ. of Texas. Med. Branch.*

Chemistry and Metabolism of Phospholipids

THURSDAY, 1:15 P.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: H. E. Carter

665. Isolation of phosphatido-peptides, a new group of brain phosphatides. JORDI FOLCH AND

F. N. LeBaron.* *McLean Hosp. and Harvard Med. School.*

610. A new nitrogenous constituent of corn phosphatides. Herbert E. Carter, William E. M. Lands,* Katherine I. Mueller* and H. H. Tomizawa.* *Noyes Lab. of Chemistry, Urbana.*

926. Isolation of gangliosides and cerebrosulfatides from beef brain. S. J. Tannhauser and N. F. Boncoddo.* *Tufts Med. School.*

876. Chemistry of acetal phospholipides. G. Schmidt, B. Ottenstein* and M. J. Bessman.* *Boston Dispensary and Tufts Med. School.*

79. Biochemical properties of brain phosphatide fractions. Doris M. Clouet (intr. by Norman S. Olsen). *VA Hosp. and Vanderbilt Univ.* (Physiol.)

974. Biosynthesis of sphingosine. Irving Zabin and James F. Mead (intr. by Wendell H. Griffith). *Univ. of California School of Medicine, Los Angeles.*

740. Incorporation of palmitate into tissue lipids *in vitro*. Lillian Jedeikin* and Sidney Weinhouse. *Lankenau Hosp. and Temple Univ.*

898. Incorporation of carboxyl carbon of octanoic acid into brain lipides. Warren M. Sperry, Reginald M. Taylor* and Herbert L. Meltzer.* *New York State Psychiatric Inst. and Columbia Univ.*

907. Utilization of methionine-CH_3-C^{14} and choline-CH_3-C^{14} for the synthesis of phospholipids in the intact rat. Jakob A. Stekol, S. Weiss,* Peng-Tung-Hsu* and P. Smith.* *Lankenau Hosp.*

707. Enzymatic studies on phospholipide metabolism of *Serratia plymuthicum*. Osamu Hayaishi. *Natl. Insts. of Health.*

700. Action of lecithinase A on a pure, unsaturated lecithin. Donald J. Hanahan, Leslie D. Turner* and Martin A. Rodbell.* *Univ. of Washington.*

Nutrition—B Vitamins

Thursday, 1:15 p.m.—Conrad Hilton, West Ballroom

Chairman: C. A. Elvehjem

733. Metabolism of radioactive thiamine in the rat. J. M. Iacono,* G. Wolf* and B. Connor Johnson. *Univ. of Illinois.*

840. Mechanism of riboflavin biosynthesis. G. W. E. Plaut. *Univ. of Wisconsin.*

552. Reversal of inhibitory activity of diethyl riboflavin in rats by administration of riboflavin. H. V. Aposhian, J. R. Lambooy and M. M. Aposhian (intr. by J. R. Murlin). *Univ. of Rochester School of Medicine.*

712. Interrelationship between thioctic acid, L-lyxoflavin, and riboflavin in *Streptococcus faecalis*. C. H. Hill (intr. by G. H. Satterfield). *North Carolina State College of Agriculture and Engineering.*

794. Synthesis of pantothenic acid by a pyrophosphate-liberating cleavage of ATP. Werner K. Maas (intr. by G. David Novelli). *Massachusetts General Hosp., and Harvard Med. School.*

762. Color reaction for pyridone metabolite of niacin and other pyridones. W. E. Knox and Kermit L. Pines.* *Tufts Med. School and Columbia Univ.*

833. Changes in coenzyme A content and pyruvate metabolism of the liver in dietary hepatic necrosis in rats. Robert E. Olson. *Univ. of Pittsburgh Grad. School of Public Health.*

Microorganisms—Growth Factors

Thursday, 1:15 p.m.—Conrad Hilton, North Assembly Room

Chairman: V. H. Cheldelin

925. Chemistry of Antimycin A. G. M. Tener,* E. van Tamelen* and F. M. Strong. *Univ. of Wisconsin.*

1449. Biochemical studies of compounds inhibiting uptake of vitamin B_{12} by 'resting' bacterial cells. Robert L. Davis* and Bacon F. Chow. *Johns Hopkins Univ. School of Hygiene and Public Health.* (Immunol.).

889. Factors influencing the assay of the staphyloccus stimulatory factor (SSF). Nathan Sloane, M. Samuels and W. Barg (intr. by B. L. Hutchings). *American Cyanamid Co.*

681. Growth stimulatory factors in plasma for *Staphylococcus albus* and *Streptococcus faecalis*. Erland C. Gjessing. *New England Deaconess Hosp.*

596. Growth requirements for a penicillin sensitive strain of *Sarcina lutea*. John W. Brown* and S. B. Binkley. *Univ. of Illinois College of Medicine.*

937. Steroid requirements for *Paramecium aurelia*, var. 4, stock 51.7 (s) in axenic culture. W. J. van Wagtendonk and R. L. Conner.* *Indiana Univ.*

Amino Acid Metabolism I

Thursday, 1:15 p.m.—Conrad Hilton, Boulevard Room

Chairman: L. Miller

839. Effects of glycocyamine on creatine phosphate levels in rat muscle. Ruth D. Peterson,* Clarissa H. Beatty,* Henry H. Dixon* and Edward S. West. *Univ. of Oregon Med. School.*

559. Oxidation of L-glutamic acid by heart homogenates. JORGE AWAPARA. *Univ. of Texas.*

699. Metabolism of isomers of threonine in the phloridzinized rat. W. KNOWLTON HALL, TECKLA E. STELLING* AND AGNES C. REDFEARN.* *Med. College of Georgia.*

862. Intermediary metabolism of DL-lysine-ϵ-C^{14}. MORTON ROTHSTEIN (intr. by FRANCES HAVEN). *Univ. of Rochester School of Medicine.*

562. Diet and ergothioneine of the blood. ROBERT C. BALDRIDGE* AND HOWARD B. LEWIS. *Univ. of Michigan.*

811. Studies on ergothioneine. DONALD B. MELVILLE, WILLIAM H. HORNER* AND CHARLES C. OTKEN.* *Cornell Univ. Med. College.*

921. Occurrence of a new amino acid, 3-methylhistidine, in human urine. HARRIS H. TALLAN (intr. by WILLIAM H. STEIN). *Rockefeller Inst.*

555. Metabolism of phenylalanine. MARVIN D. ARMSTRONG. *Lab. for Study of Hereditary and Metabolic Disorders.*

873. Intermediate steps in tyrosine metabolism. BERNARD SCHEPARTZ (intr. by WILLIAM H. PEARLMAN). *Jefferson Med. College.*

1535. Chemical characteristics of pressor amines extracted from urine. D. F. DAVIES, K. M. WOLFE,* H. M. PERRY, JR.,* H. A. SCHROEDER AND E. M. MENHARD.* *Washington Univ. School of Medicine* (Physiol.).

Biochemistry Society Business Meeting

THURSDAY, 4:00 P.M.—CONRAD HILTON, NORTH BALLROOM

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Program on page 477

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*
Members and guests of all Societies are cordially welcome.

Friday Morning, April 10, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*

For complete institutional connection and address see abstract, Part I.

Nutrition—Amino Acids and Protein

FRIDAY, 9:00 A.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: H. H. Williams

812. Quantitative valine requirement of the weanling pig. E. T. MERTZ, H. D. JACKSON* AND W. M. BEESON.* *Purdue Univ.*

636. An *in vivo* study of the availability of amino acids in proteins. A. E. DENTON,* S. N. GERSHOFF* AND C. A. ELVEHJEM. *Univ. of Wisconsin.*

766. Amino acid imbalance in relation to tryptophan and niacin in nonprotein diets. O. J. KOEPPE* AND L. M. HENDERSON. *Univ. of Illinois.*

973. Effect of proparglyglycine on growth of the rat. EZZAT S. YOUNATHAN* AND KARL DITTMER. *Florida State Univ.*

790. Properties of soyin, a toxic protein isolated from soybean flour. I. E. LIENER, M. J. PALLANSCH AND J. E. ROSE (intr. by M. O. SCHULTZE). *Univ. of Minnesota.*

867. Relationship of amino acids and protein to the production of fatty livers in rats. H. E. SAUBERLICH. *Alabama Polytechnic Inst.*

784. Effect of ethionine on the liver lipide and liver protein content of growing rats. MELVIN LEVINE AND JOHN V. FOPEANO, JR. (intr. by JOSEPH P. CHANDLER). *Univ. of Michigan.*

936. Effect of excessive dietary zinc on growth and liver enzymes of the rat. ROBERT VAN REEN* AND PAUL B. PEARSON. *Johns Hopkins Univ.*

585. Effect of itaconic acid on body weight and growth of rats. ALBERT N. BOOTH,* ROBERT H. WILSON* AND FLOYD DEEDS. *USDA Western Regional Research Lab.*

297. Relations between reduction of adrenal ascorbic acid produced by certain aromatic acids and their plasma levels. JULIUS LOWENTHAL AND FRED MORRIS (intr. by L. B. JAQUES). *Univ. of Saskatchewan.* (Physiol.).

Oxidative Enzymes—II

FRIDAY, 9:00 A.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: S. P. Colowick

213. Effect of x-irradiation upon anaerobic glycolysis. JEAN HICKMAN AND GILBERT ASHWELL (intr. by LOUISE MARSHALL). *Natl. Insts. of Health* (Physiol.).

612. Some reactions of glyceraldehyde-3-phosphate dehydrogenase. BRITTON CHANCE AND JANE HARTING.* *Univ. of Pennsylvania.*

588. Role of sulfhydryl groups in D-glyceraldehyde-3-phosphate dehydrogenase catalysis. P. D. BOYER AND H. L. SEGAL.* *Univ. of Minnesota.*

698. Kinetics and specificity of lactic dehydrogenase. MAIRE T. HAKALA,* ANDREW J. GLAID* AND GEORGE W. SCHWERT. *Duke Univ. School of Medicine.*

955. Stereochemistry of the reaction catalyzed by alcohol dehydrogenase. F. H. WESTHEIMER,* FRANK LOEWUS* AND BIRGIT VENNESLAND. *Univ. of Chicago.*

842. Structure of reduced pyridine nucleotides. MAYNARD E. PULLMAN (intr. by SIDNEY P. COLOWICK). *Johns Hopkins Univ.*

969. A pyridine nucleotide—quinone reductase. WALTER D. WOSILAIT AND ALVIN NASON (intr. by E. V. MCCOLLUM). *Johns Hopkins Univ.*

670. Sulfhydryl groups and ascorbic acid oxidase activity. EARL FRIEDEN (intr. by EDWARD H. FRIEDEN). *Florida State Univ.*

Plant Biochemistry

FRIDAY, 9:00 A.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: R. H. Burris

966. Chloroplast structure. JEROME J. WOLKEN (intr. by RICHARD H. MCCOY). *Univ. of Pittsburgh.*

54. Report on quantum efficiencies of photosynthesis in *Chlorella*. FREDERICK S. BRACKETT, RODNEY A. OLSON AND ROBERT G. CRICKARD (intr. by WADE H. MARSHALL). *Natl. Insts. of Health* (Physiol.).

658. Photochemical carbon dioxide fixation. E. W. FAGER (intr. by HANS GAFFRON). *Univ. of Chicago.*

757. Transamination in plants. K. W. KING,* D. G. WILSON* AND R. H. BURRIS. *Univ. of Wisconsin.*

871. Coupled transaminations and decarboxylations in extracts of higher plants. OTTO SCHALES AND SELMA S. SCHALES.* *Tulane Univ. School of Medicine.*

855. Transamination of γ-aminobutyric acid and

β-alanine in microorganisms. EUGENE ROBERTS, PADMASINI AYENGAR* AND IRENE POSNER.* *Washington Univ. School of Medicine.*

680. Metabolism of hexose phosphate and pentose phosphate by plant leaves and plant roots. MARTIN GIBBS (intr. by ROBERT STEELE). *Brookhaven Natl. Lab.*

584. Oxidation of palmitic acid by plant extracts. ANN H. BOKMAN,* ELDON H. NEWCOMB,* PAUL A. CASTELFRANCO* AND P. K. STUMPF. *Univ. of California.*

547. Pyridine nucleotides in higher plants. DAVID G. ANDERSON (intr. by ERIC E. CONN). *Univ. of Chicago.*

627. Effect of golden nematode hatching factor on acid production by *Aspergillus awamori*. R. V. DAHLSTROM, W. V. HARTWELL AND A. L. NEAL (intr. by L. A. MAYNARD). *Cornell Univ.*

Hemoglobin

FRIDAY, 9:00 A.M.—CONRAD HILTON, WEST BALLROOM

Chairman: D. L. Drabkin

546. Separation of hemoglobin by paper chromatography. MARIE A. ANDERSCH. *Univ. of Maryland School of Medicine.*

736. Identification of fetal hemoglobin in four modifications of sickle cell disease. HARVEY A. ITANO (intr. by CARL G. NIEMANN). *California Inst. of Technology.*

971. Citric acid cycle and porphyrin synthesis. JOHN C. WRISTON, JR.,* LEON LACK* AND DAVID SHEMIN. *Columbia Univ. College of P. & S.*

545. Chemopathology of hemoglobin synthesis in mice with a hereditary anemia. KURT I. ALTMAN,* ELIZABETH R. RUSSELL,* KURT SALOMON AND JAMES K. SCOTT.* *Univ. of Rochester School of Medicine and Jackson Mem. Labs.*

777. Porphyrins present in porphyria urine and in nucleated erythrocytes. EARL G. LARSEN,* CONSTANTINE M. GLAFKIDES* AND JAMES M. ORTEN. *Wayne Univ. College of Medicine.*

975. Specific effect of formate ion on the reversible acid denaturation of ferrihemoglobin. ETHEL M. ZAISER* AND JACINTO STEINHARDT. *Massachusetts Inst. of Technology.*

688. 'Anomalous' absorption spectra of erythrocytes. EDWIN GORDY* AND DAVID L. DRABKIN. *Univ. of Pennsylvania Grad. School of Medicine.*

834. Methemoglobin and sulfhemoglobin content of human blood. W. D. PAUL,* ESTHER BURNHAM,* DOROTHY SCHOTTELIUS* AND J. I. ROUTH. *State Univ. of Iowa.*

Microorganisms—Carbohydrate Metabolism

FRIDAY, 9:00 A.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: I. C. Gunsalus

725. Effect of putrescine on glucose oxidation and oxidative phosphorylation. DOROTHY D. HUBBARD AND EDWARD J. HERBST (intr. by E. G. SCHMIDT). *Univ. of Maryland.*

1546. Pattern of glucose oxidation by *Acetobacter melanogenum*. H. KATZNELSON AND S. W. TANENBAUM (intr. by H. S. LORING). *Stanford Univ.*

1550. Formation of propionic acid from lactic acid by *Clostridium propionicum* and by *Propionibacterium arabinosum*. F. W. LEAVER (intr. by J. H. JONES). *Western Reserve Univ.*

684. Oxidative metabolism of acetate by *Penicillium chrysogenum* Q176. EUGENE P. GOLDSCHMIDT AND HENRY KOFFLER (intr. by RALPH C. CORLEY). *Purdue Univ.*

1544. Biosynthesis of itaconic acid. R. H. CORZO* AND E. L. TATUM. *Stanford Univ.*

613. Participation of coenzyme A in oxidative dissimilation by *Acetobacter suboxydans*. VERNON H. CHELDELIN, JENS G. HAUGE* AND T. E. KING. *Oregon State College.*

912. Zymonic acid II. A survey of yeasts using azo derivatives. FRANK H. STODOLA, ODETTE L. SHOTWELL, G. E. N. NELSON AND L. J. WICKERHAM (intr. by RICHAND W. JACKSON). *USDA Northern Regional Research Lab.*

549. Cyclitol oxidizing enzyme system of *Acetobacter suboxydans*. LAURENS ANDERSON, KENKICHI TOMITA, PETER KUSSI AND S. KIRKWOOD (intr. by E. B. HART). *Univ. of Wisconsin.*

1507. Biosynthetic path from glucose to shikimic acid. HAROLD SHIGEURA,* DAVID B. SPRINSON AND BERNARD D. DAVIS. *Columbia Univ. and Cornell Univ. Med. College.* (Immunology).

679. Activation of cell-free formic hydrogenylase of *Escherichia coli*. HOWARD GEST, H. E. SWIM* AND S. S. BARKULIS.* *Western Reserve Univ. School of Medicine.*

Amino Acid Metabolism—II

FRIDAY, 9:00 A.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: P. P. Cohen

853. Concentrative uptake of ultraviolet-absorbing amino acids by cells. THOMAS R. RIGGS,* BARBARA A. COYNE* AND HALVOR N. CHRISTENSEN. *Tufts Med. School.*

845. Interrelationships involving aspartic acid. JOANNE M. RAVEL,* LOUISE WOODS,* BARBARA

FELSING* AND WILLIAM SHIVE. *Univ. of Texas and Clayton Research Fndn.*

861. Oxidation of amino acids by *Tetrahymena geleii* W. JAY S. ROTH, HERBERT J. EICHEL AND E. GINTER (intr. by J. S. HEPBURN). *Hahnemann Med. College.*

664. Effect of insulin on the free amino acids after hepatectomy. EUNICE V. FLOCK, JESSE L. BOLLMAN,* JOHN H. GRINDLAY* AND FRANK C. MANN.* *Mayo Fndn.*

743. Free and protein amino acids of chick chorioallantoic membranes. C. A. JOHNSON,* J. E. KEMPF,* A. V. KROEGER* AND O. BERGEIM. *Univ. of Illinois College of Medicine.*

768. Bacterial conversion of citrulline to ornithine. MITCHELL KORZENOVSKY* AND C. H. WERKMAN. *Iowa State College.*

695. Role of L-formyglutamic acid in the biosynthesis of citrulline. SANTIAGO GRISOLIA. *Univ. of Wisconsin.*

844. Formation of arginine and fumarate by cleavage of argininosuccinic acid. S. RATNER, W. P. ANSLOW AND B. PETRACK.* *New York Univ. College of Medicine.*

897. Effect of steroids on oxidation of proline by kidney of adrenalectomized and hypophysectomized rats. T. L. SOURKES (intr. by W. W. UMBREIT). *Merck Inst.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Lost and Found Articles

Inquire at the Federation Office, Conrad Hilton Hotel.

Friday Afternoon, April 10, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*

For complete institutional connection and address see abstract, Part I.

Nutrition—Citrovorum Factor, B_{12}, Thioctic Acid

FRIDAY, 1:15 P.M.—CONRAD HILTON, GRAND BALLROOM

Chairman: T. H. Jukes

823. Influence of dietary choline and methionine on citrovorum factor activity of rat liver autolysates. MARIE K. MURPHY AND KLAUS SCHWARZ (intr. by OLAF MICHELSEN). *Natl. Insts. of Health.*

885. Citrovorum factor intermediate in liver autolysates. MILTON SILVERMAN AND JOHN C. KERESZTESY. *Natl. Insts. of Health.*

615. Observations on properties of B_{12} binding substance in gastric juice. BACON F. CHOW AND R. YAMAMOTO.* *Johns Hopkins Univ. School of Hygiene and Public Health.*

920. Vitamin B_{12}-binding factor in the duodenal secretions of man. MARIAN E. SWENDSEID, HERBERT SCHAPIRO* AND JAMES A. HALSTEAD.* *VA Center and Univ. of California, Los Angeles.*

756. Influence of thioctic acid and folic acid on amino acid synthesis in *Tetrahymena*. G. W. KIDDER AND VIRGINIA C. DEWEY. *Amherst College.*

641. Nature of the keto acids accumulated in thioctic acid deficiency. VIRGINIA C. DEWEY AND G. W. KIDDER. *Amherst College.*

675. Differing action of antibiotics and arsonic acids for growth promotion. DOUGLAS V. FROST AND HENRY C. SPRUTH.* *Abbott Labs.*

761. Biochemical changes in unsaturated fatty acid deficiency. PETER D. KLEIN* AND RALPH M. JOHNSON. *Inst. of Cancer Research and Wayne Univ. College of Medicine.*

Oxidative Enzymes—III

FRIDAY, 1:15 P.M.—CONRAD HILTON, NORTH BALLROOM

Chairman: F. Bernheim

977. Mechanism of diamine oxidase reaction. E. A. ZELLER, J. R. FOUTS* AND W. VOEGTLI.* *Northwestern Univ. Med. School.*

568. Effect of scurvy and of L-histidine feeding on guinea pig tissue diamine oxidase. DANIEL H. BASINSKI AND HSIEN-GIEH SIE (intr. by ICIE G. MACY). *Children's Fund of Michigan.*

595. Identification of a factor in yeast stimulatory for the formic hydrogenlyase enzyme system. HARRY P. BROQUIST AND A. RICHARD KOHLER.* *Lederle Labs.*

626. Properties and distribution of homogentisic acid oxidase. DANA I. CRANDALL. *Univ. of Cincinnati College of Medicine.*

673. Inhibition by methoxyacetate of sarcosine oxidation and its application to an analysis of dimethylglycine oxidation. WILHELM R. FRISELL* AND COSMO G. MACKENZIE. *Univ. of Colorado School of Medicine.*

902. Additional cofactors required by rat liver tyrosinase. A. SREENIVASAN* AND J. N. WILLIAMS, JR. *Univ. of Wisconsin.*

704. Flavoenzyme catalysis. Control of milk xanthine oxidase activity. JOSEPH HARRIS* AND LESLIE HELLERMAN. *Johns Hopkins School of Medicine.*

638. *'In vivo'* enhancement of rat intestinal xanthine oxidase by liver fractions or molybdate ion. E. C. DE RENZO, E. KALEITA AND P. HEYTLER (intr. by J. J. OLESON). *Lederle Labs.*

Amino Acid Metabolism—III

FRIDAY, 1:15 P.M.—CONRAD HILTON, BOULEVARD ROOM

Chairman: C. G. Mackenzie

535. Metabolism of N^{15}-ethanolamine. LYNN D. ABBOTT, JR. AND JACK D. KLINGMAN.* *Med. College of Virginia.*

894. Transformation of choline to glycine in the rat. SIDNEY SOLOWAY (intr. by MARJORIE R. STETTEN). *Public Health Research Inst. of New York.*

536. Choline synthesis in rat liver slices. C. J. ACKERMAN,* M. J. BURNS* AND W. D. SALMON. *Alabama Polytechnic Inst.*

637. Biosynthesis of serine. SHARADCHANDRA DEODHAR* AND WARWICK SAKAMI. *Western Reserve Univ. School of Medicine.*

965. Effect of folinic acid on serine synthesis in *Leuconostoc mesenteroides* P-60. FINN WOLD AND ROBERT J. SIRNY (intr. by V. G. HELLER). *Oklahoma A. and M. College.*

1014. Aspects of the mechanism of activation of methionine by ATP. G. L. CANTONI. *Western Reserve Univ. School of Medicine* (Pharmacology).

875. Transthiomethylation. F. SCHLENK AND R. L. SMITH.* *Iowa State College.*

808. Conversion of the α-keto analogue of cysteine to pyruvate and sulfur. ALTON MEISTER. *Natl. Insts. of Health.*

580. Comparative studies of sulfur metabolism. FRANCIS BINKLEY AND ALICE HUDGINS.* *Emory Univ.*

923. Aspects of sulfur metabolism. H. TARVER AND M. TABACHNICK.* *Univ. of California, Berkeley.*

648. Sulfate-sulfur metabolism in the rat foetus. DOMINIC D. DZIEWIATKOWSKI. *Rockefeller Inst.*

Detoxication and Related Topics

FRIDAY, 1:15 P.M.—CONRAD HILTON, SOUTH BALLROOM

Chairman: L. D. F. Abbott, Jr.

668. Hormonal effects upon sulfanilamide acetylation *in vitro* and *in vivo*. JOHN M. FRANZ AND GENE F. LATA (intr. by CLARENCE P. BERG). *State Univ. of Iowa.*

807. Enzymatic acylation of amines. ALAN H. MEHLER, HERBERT TABOR AND EARL R. STADTMAN. *Natl. Insts. of Health.*

634. Synthesis of phenyl and *p*-nitrophenyl sulfate by rat liver homogenate and fractions. R. H. DE MEIO, MARTHA WIZERKANIUK* AND EMMA FABIANI.* *Jefferson Med. College.*

954. Metabolism of diphenyl. HAROLD D. WEST, GHARBHARAN R. MATHURA,* EARNEST A. JONES,* LAWRENCE K. AKERS* AND JAMES R. LAWSON.* *Meharry Med. College, Vanderbilt Univ. and Tennessee A and I State Univ.*

677. Metabolism of nitriles. EMERY M. GAL* AND DAVID M. GREENBERG. *Univ. of California, Berkeley.*

572. Metabolism of methyl β-pyridyl ketone. W. T. BEHER,* W. L. ANTHONY* AND O. H. GAEBLER. *Ford Inst. for Med. Research.*

Mucopolysaccharides

FRIDAY, 1:15 P.M.—CONRAD HILTON, WEST BALLROOM

Chairman: K. Meyer

694. Extraction and colorimetric measurement of rat testicular hyaluronidase. ROGER L. GREIF (intr. by R. M. ARCHIBALD). *Rockefeller Inst.*

951. Observations on the mechanism of action of mammalian hyaluronidase. BERNARD WEISSMANN* AND KARL MEYER. *Columbia Univ. College of P. & S. and Presbyterian Hosp.*

780. Action of hyaluronidase upon sulfate-containing mucopolysaccharides synthesized *in vitro*. LAURENCE L. LAYTON AND IRVING SHER (intr. by PHILIP L. HARRIS). *Johns Hopkins Univ.*

746. Extraction of heparin by the potassium thiocyanate method. R. L. JONES, H. E. CARLSON, R. T. OLSEN AND R. A. RIEKER (intr. by D. W. MACCORQUODALE). *Abbott Labs.*

858. Biosynthesis of hyaluronic acid by group A streptococcus. SAUL ROSEMAN,* JULIO LUDOWIEG,* FRANCES E. MOSES* AND ALBERT DORFMAN. *Univ. of Chicago.*

852. Biosynthesis of *d*-glucosamine. SIDNEY V. RIEDER (intr. by CARL BACHMAN). *Univ. of Pennsylvania School of Medicine.*

581. Determination of tissue hexosamines. NORMAN F. BOAS (intr. by ROBERT W. BATES). *Natl. Insts. of Health.*

640. Fetuin: A glycoprotein of fetal calf blood serum. H. F. DEUTSCH. *Univ. of Wisconsin Med. School.*

901. Blood group mucoids in the growth promotion of *Lactobacillus bifidus* var. Penn. GEORG F. SPRINGER* AND PAUL GYÖRGY. *Univ. of Pennsylvania.*

1408. Enhancement of microbiological growth activity of a β-glucoside by the corresponding α-glucoside. CATHARINE S. ROSE,* R. KUHN* AND P. GYÖRGY. *Univ. of Pennsylvania School of Medicine.* (Nutrition).

1265. Oxygen consumption and chondroitin sulfate synthesis by chick embryonic cartilage. EUGENE S. BOYD (intr. by J. K. SCOTT). *Univ. of Rochester School of Medicine.* (Pathol.).

Microorganisms—Nitrogen and Sulfur Metabolism

FRIDAY 1:15 P.M.—CONRAD HILTON, NORTH ASSEMBLY ROOM

Chairman: H. A. Barker

882. Methionine metabolism of *Streptococcus faecalis*. GERALD D. SHOCKMAN* AND GERRIT TOENNIES. *Inst. for Cancer Research and Lankenau Hosp.*

750. Synthesis of methionine in *E. Coli*. EDWIN KALAN* AND JOSEPH CEITHAML. *Univ. of Chicago.*

606. Metabolic intermolecular transfer of methyl groups in *Hordeum vulgare*. R. U. BYERRUM, L. J. DEWEY AND C. D. BALL (intr. by R. M. HERBST). *Michigan State College.*

908. Utilization of sulfur compounds by *Penicillium chrysogenum*. CARL M. STEVENS, FRAN VOHRA,* EDWARD INAMINE* AND OLIVER A. ROHOLT.* *State College of Washington.*

647. Influence of vitamin B_{12} on enzyme activity in *E. coli* 113-3. JACOB W. DUBNOFF. *California Inst. of Technology.*

672. Effects of potassium on purine synthesis and growth in *Escherichia coli*. SAMUEL FRIEDMAN AND CHARLES L. FOX, JR. (intr. by I. S. KLEINER). *New York Med. College.*

843. Intermediates in purine decomposition by *Clostridium cylindrosporum*. JESSE C. RABINOWITZ AND H. A. BARKER. *Univ. of California, Berkeley.*

703. Biosynthesis of thiamine in neurospora. DANIEL L. HARRIS (intr. by FRANKLIN C. MCLEAN). *Univ. of Chicago.*

824. Production of nitrogen from nitrite by cell-free extracts of *Pseudomonas stutzeri* and *Bacillus subtilis*. VICTOR A. NAJJAR AND M. B. ALLEN.* *Johns Hopkins Med. School. and Stanford Univ.*

884. Enzymatic studies on nitrate and nitrite mutants of *Neurospora*. WARREN S. SILVER* AND WILLIAM D. MCELROY. *Johns Hopkins Univ.*

PAPERS READ BY TITLE

538. Determination of reducing sugars in the presence of amino acids and polypeptides. MAX ADLER* AND FRANKLIN HOLLANDER. *Mount Sinai Hosp.*

539. Protein sparing action of various carbohydrates. ANTHONY A. ALBANESE, D. RANDALL HAYS,* WILLIAM H. ARNOLD,* ROSEMARIE DILALLO,* LOUISE ORTO* AND AURORA BELMONT.* *St. Luke's Hosp.*

541. 'Coagulation' changes in incoagulable afibrinogenemic blood. BENJAMIN ALEXANDER, ROBERT GOLDSTEIN,* ANNE G. LE BOLLOC'H,* LOUIS K. DIAMOND* AND WAYNE BORGES.* Beth Israel Hosp., *Children's Hosp. and Harvard Med. School.*

543. Reactions of nitramide catalyzed by cell-free extracts of *Pseudomonas stutzeri* and *Bacillus subtilis*. M. B. ALLEN* AND VICTOR A. NAJJAR. Stanford Univ. and *Johns Hopkins Med. School.*

550. Determination of urinary oxalate. JAMES C. ANDREWS AND ROBERT E. SIMPSON.* *Univ. of North Carolina School of Medicine.*

551. Generality of stepwise protein synthesis. CHRISTIAN B. ANFINSEN AND MARTIN FLAVIN.* *Natl. Heart Inst.*

553. Studies on rhodanese and desulfhydrase. R. M. ARCHIBALD AND HELEN GORDON.* *Rockefeller Inst.*

555. Metabolism of N-ethylglycocyamine. MARVIN D. ARMSTRONG. *Lab. for Study of Hereditary and Metabolic Disorders.*

556. *In vitro* loss of calcium from plasma of whole blood. W. D. ARMSTRONG AND LEON SINGER.* *Univ. of Minnesota.*

578. Factors in pyruvate and acetaldehyde oxidation and acetylcholine synthesis in mammalian brain. JAMES F. BERRY* AND ELMER STOTZ. *Univ. of Rochester School of Medicine.*

587. Determination of Evans blue using zephiran as a solvent. ADA BORYCHOWSKA (intr. by ANCEL KEYS). *Univ. of Minnesota.*

593. Metabolism of C^{14}-L(+) and D(−) lactic acid by the Ehrlich's mouse ascites carcinoma cell. MYRON BRIN,* JO'ANN JEHL* AND RALPH W. MCKEE. *New England Deaconess Hosp.*

594. Vitamin B_{12} content of the feces of 4 normal women. PATRICIA BROBERG,* DOLORES OTTO MILLER* AND HELEN T. PARSONS. *Univ. of Wisconsin.*

601. Reversible solarization in intermittent photosynthesis and its significance for the Blackman time constant, chlorophyll unit, and catalyst B. DEAN BURK, GEORGE HOBBY,* THOMAS LAUGHEAD* AND VERNON RILEY.* *Nat. Insts. of Health.*

623. Effect of whole body x-irradiation on liver function. W. E. CORNATZER, O. ENGELSTAD* AND JOHN P. DAVISON.* *Univ. of North Dakota Med. School.*

631. Microdetermination of glucuronic acid in blood. J. S. DEFRATES* AND M. J. BOYD. *Hahnemann Med. College.*

652. Spectrophotometric determination of choline dehydrogenase activity. HERBERT J. EICHEL (intr. by W. W. WAINIO). *Hahnemann Med. College.*

661. Thromboplastin inhibitors in serum. JOHN B. FIELD, GERARD F. LANCHANTIN* AND ARNOLD G. WARE. *Univ. of Southern California and Los Angeles County Hosp.*

662. Carbon monoxide uptake at rest and during a steady state of exercise. GILES F. FILLEY, DONALD J. MACINTOSH AND GEORGE W. WRIGHT (intr. by F. W. KLEMPERER). *Trudeau Fndn.*

669. Short term carbon dioxide fixation in tumor *in vivo*. FELIX FRIEDBERG AND LAWRENCE M. MARSHALL. *Howard Univ. School of Medicine.*

701. Protein synthesis in multiple myeloma. SARAH HARDY* AND FRANK W. PUTNAM. *Univ. of Chicago.*

708. Steroid hydroxylases of adrenal and corpus luteum. MIKA HAYANO, MARAGRET WIENER* AND MARJORIE C. LINDBERG.* *Worcester Fndn. for Exptl. Biology.*

709. Effect of ACTH on corticoid production of adrenal cortical tissue slices. ROBERT HAYNES,* KENNETH SAVARD* AND RALPH I. DORFMAN. *Worcester Fndn. for Exptl. Biology.*

713. Decaborane inhibition of the utilization of glucose by living yeast cells. DAVID L. HILL, KENNETH I. HAWKINS AND HENRY C. ZAK (intr. by WILLIAM H. SUMMERSON). *Chemical Corps Med. Labs.*

735. Filter paper electrophoresis of nucleoproteins and nucleic acids. J. LOGAN IRVIN AND ELINOR MOORE IRVIN. *Univ. of North Caroline.*

745. Seasonal variation in toxicity of demerol hydrochloride (Isonipecaine) in golden hamsters. WALTER H. JOHNSON* AND EMMETT B. CARMICHAEL. *Univ. of Alabama.*

758. Isobutyric, propionic, and lactic acids as intermediates in metabolism of valine. DAVID KINNORY* AND DAVID M. GREENBERG. *Univ. of California, Berkeley.*

760. Effect of whole-body x-irradiation on the oxygen uptake of duck blood. J. RAYMOND KLEIN. *Brookhaven Natl. Lab.*

765. 7-Dehydrocholesterol in human serum. ALFRED E. KOEHLER AND ELSIE HILL.* *Sansum Clinic Research Fndn. and Santa Barbara Cottage Hosp.*

776. Accumulation of Δ^7-cholestenol after squalene feeding. R. G. LANGDON* AND K. BLOCH. *Univ. of Chicago.*

778. Incorporation of formate-C^{14} into the purines and pyrimidines of RNA and DNA in normal and x-irradiated chick embryos. PAUL S. LAVIK. *Western Reserve Univ.*

781. Path of phosphate in oxidative phosphorylation. KWAN-HUA LEE* AND JOHN J. EILER. *Univ. of California, San Francisco.*

785. Color reaction for dehydroisoandrosterone. VICTOR E. LEVINE AND ALBERT H. TAO.* *Creighton Univ. School of Medicine.*

788. Effect of acetic acid on hypophyseal growth hormone (somatotropin). CHOH HAO LI AND H. PAPKOFF.* *Univ. of California, Berkeley.*

791. Nucleic acid changes in mice receiving N-acetyl-2-aminofluorene. M. E. LOMBARDO,* AND L. R. CERECEDO. *Fordham Univ.*

792. Activation of plant glutamyl transphorase by ADP, IDP and ATP. W. D. LOOMIS* AND P. K. STUMPF. *Univ. of California, Berkeley.*

795. Ovomucin and the antihemagglutinin activity of egg white. L. R. MACDONNELL,* C. A. KNIGHT AND R. E. FEENEY. *USDA Western Regional Research Lab. and Univ. of California, Berkeley.*

798. Effect of protein depletion on the concentration of nucleic acid and phospholipid in normal and degenerating peripheral nerve. W. A. MANNELL (intr. by R. J. ROSSITER). *Univ. of Western Ontario.*

801. Relationship of critical micelle concentration to the inactivation of hyaluronidase by anionic detergents. MARTIN B. MATHEWS (intr. by ALBERT DORFMAN). *Univ. of Chicago.*

814. Effect of ethylenimine derivatives on the oxidation of choline and formaldehyde. ZELMA MILLER. *Children's Med. Center and Harvard Med. School.*

832. Transfer of ions between plasma and cerebrospinal fluid. NORMAN S. OLSEN AND GUILFORD G. RUDOLPH.* *VA Hosp. and Vanderbilt Univ.*

860. Effect of the carcinogen, 2-aminofluorene on *Tetrahymena geleii*. JAY S. ROTH (intr. by J. S. HEPBURN). *Hahnemann Med. College.*

865. Preparation of gamma-glutamyl peptides. HOWARD SACHS* AND ERWIN BRAND. *Columbia Univ. College of P. & S.*

874. Immunochemical specificity of alkaline phosphatase from dog intestine. MAX SCHLAMOWITZ (intr. by OSCAR BODANSKY). *Sloan-Kettering Inst.*

879. Enzymatic activities in a microbial preparation of glucose oxidase. SIGMUND SCHWIMMER. *USDA Western Regional Research Lab.*

891. Combination of uridylic acid with magnesium or manganous ions. KENDRIC C. SMITH* AND FRANK WORTHINGTON ALLEN. *Univ. of California, Berkeley.*

896. Role of N^{15} glycine, aspartate and glutamate in hypoxanthine synthesis. JOHN C. SONNE AND I. LIN (intr. by JOHN M. BUCHANAN). *Univ. of Pennsylvania School of Medicine.*

899. Spectrophotometric changes of sodium nucleates induced by ultrasonic radiation. M. SPIEGEL-ADOLF AND P. J. ERNST.* *Temple Univ. School of Medicine.*

904. Influence of testosterone upon surface tension. ROYCE D. STAUFFER* AND FRITZ BISCHOFF. *Santa Barbara Cottage Hosp.*

906. Cystathionine-C^{14} and cystine-3-C^{14} as sources of the methyl groups of choline and creatine in the intact rat. JACOB A. STEKOL, S. WEISS* AND P. SMITH.* *Inst. for Cancer Research.*

911. Spectrophotometric exogenous urinary estrogen excretion studies in the rabbit. BENJAMIN F. STIMMEL. *Rees-Stealy Clinic Research Fndn.*

929. Utilization of formate in thymine formation by bone marrow cell suspensions. JOHN R. TOTTER. *Oak Ridge Natl. Lab.*

941. Models for fluorophosphatase reaction. THEODOR WAGNER-JAUREGG, BRENNIE E. HACKLEY, JR.,* REUBEN PROPER* AND OMER O. OWENS.* *Chemical Corps Med. Labs.*

953. Selective uptake of Ag^{111} by sarcoma tissue in C F W mice. HAROLD D. WEST, HORACE GOLDIE* AND RICHARD D. HANDYE.* *Meharry Med. College.*

959. Differential assay for pyridine nucleotides and N^1-methylnicotinamide in 0.1-ml. blood samples. J. N. WILLIAMS, JR. AND JEAN P. KRING.* *Univ. of Wisconsin.*

963. Fatty acid dehydrogenases of rat liver mitochondria. ROBERT F. WITTER, MARY COTTONE* AND WALTER J. PORIES.* *Univ. of Rochester.*

964. Diffusibility of dyes in buffered and unbuffered solutions. SIEGFRIED WOISLAWSKI (intr. by W. R. BLOOR). *Univ. of Florida.*

THE AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Forty-third Annual Meeting

Chicago, Illinois, April 6–10, 1953

Monday Evening, April 6, 7:30 p.m.

Panel Discussion on Pharmacological Teaching

MONDAY, 7:30 P.M.—CONGRESS, FLORENTINE ROOM

Arranged by Chauncey D. Leake and Robert A. Woodbury

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.
Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Tuesday Morning, April 7, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Cardiac Drugs I

TUESDAY, 9:00 A.M.—CONGRESS, GOLD ROOM

Chairman: Harry Beckman

1165. Effect of hydrazine on cat papillary muscle. EDMUND F. MURTHA* AND J. HENRY WILLS. *Chemical Corps Med. Labs.*

1193. Inhibition of ventricular arrhythmias in the cat by certain curariform agents. B. B. ROY,* JAY ROBERTS,* SOLOMON GARB, JOSEPH REILLY AND WALTER F. RIKER, JR. *Cornell Univ. Med. College.*

1069. Cardiotoxicity and cardiotonicity of certain sympathomimetic amines and their effect on the abnormally beating ventricle. JEROME M. GLASSMAN,* SYDNEY SPECTOR,* JOSEPH SEIFTER, PETER R. LYNCH* AND M. J. OPPENHEIMER. *Wyeth, Inc. and Temple Univ. School of Medicine.*

1082. Papaverine analogs V. Biochemorphology. CALVIN HANNA (intr. by E. G. GROSS). *State Univ. of Iowa.*

1192. Destruction and elimination of dioxyline in the dog. MARY A. ROOT AND J. P. COMER.* *Lilly Research Labs.*

1120. Effects of alcohol on coronary circulation in the dog. NORMAN LASKER* AND THEODORE R. SHERROD. *Univ. of Illinois College of Medicine.*

1254. Coronary dilator action of the adenine—ATP series. MARTIN M. WINBURY, DOLORES H. PAPIERSKI,* MIRIAM HEMMER* AND W. E. HAMBOURGER. *G. D. Searle & Co.*

1216. Evaluation of antifibrillatory drugs in experimental coronary occlusion. JOHN E. STEINHAUS AND NORMAN L. CARDEN.* *Univ. of Wisconsin Med. School.*

1195. Experimental cardiac arrest. MARTIN L. RYAN AND C. W. WHITE, JR. (intr. by EARL H. DEARBORN). *Boston Univ.*

1199. Resuscitation after experimental cardiac arrest. RICHARD A. SALVADOR AND C. W. WHITE, JR. (intr. by EARL H. DEARBORN). *Boston Univ.*

1345. Bronchodilator and other pharmacological properties of chloroethyltheophylline (EN-609). HAROLD BLUMBERG, STEVEN CARSON,* EDWARD STEIN,* ALBERT SCHLESINGER* AND SAMUEL M. GORDON.* *Endo Products, Inc.* (Nutrition).

Anticonvulsants

TUESDAY, 9:00 A.M.—CONGRESS, FLORENTINE ROOM

Chairman: Guy M. Everett

1021. Comparison of the anticonvulsant properties of Dilantin, Mephenesin and Benadryl. GRAHAM CHEN, CHARLES R. ENSOR AND RUTH PORTMAN. *Parke, Davis & Co.*

1187. Physiological disposition of Mephenesin and Mephenesin carbamate. ARTHUR P. RICHARDSON, PASSIE S. JONES* AND HARRY A. WALKER. *Emory Univ. School of Medicine.*

1081. Pharmacological actions of coanesin. THOMAS J. HALEY AND JAMES L. LEITCH.* *Univ. of California at Los Angeles.*

1107. Interneuronal depressant properties of atrolactamide. ELLEN EVA KING (intr. by KLAUS R. UNNA). *Univ. of Illinois College of Medicine.*

1098. Pyridoxine as an antidote to semicarbazide seizures. ELIZABETH H. JENNEY,* RICHARD P. SMITH* AND CARL C. PFEIFFER. *Univ. of Illinois College of Medicine.*

1089. Effects of therapeutic gases on properties of experimental seizures in mice. JOYCE R. HENRIE,* L. T. ROLLINS,* J. C. JONES,* T. SATO,* D. M. WOODBURY AND L. S. GOODMAN. *Univ. of Utah College of Medicine.*

985. Excretion of radioactive C^{14} by rats given C^{14}-phenurone (Phenacetylurea). D. T. ASHER,* J. D. TAYLOR* AND R. K. RICHARDS. *Abbott Labs.*

1249. Potency of anticonvulsant drug combinations versus Metrazol seizures in mice: Dilantin combined with other antiepileptics. L. C. WEAVER,* E. A. SWINYARD AND L. S. GOODMAN. *Univ. of Utah Colleges of Pharmacy and Medicine.*

1221. Effects of anticonvulsants and analeptics on recovery time for maximal electroshock seizures in rats. E. A. SWINYARD, D. H. TEDESCHI* AND L. S. GOODMAN. *Univ. of Utah Colleges of Pharmacy and Medicine.*

1256. Effect of diphenylhydantoin on electroshock seizure threshold of intact and adrenalectomized rats. DIXON M. WOODBURY AND LOUIS S. GOODMAN. *Univ. of Utah College of Medicine.*

1006. Anticonvulsant properties of Mysoline. W. C. BROWN,* L. S. GOODMAN AND E. A. SWIN-

YARD. *Univ. of Utah Colleges of Medicine and Pharmacy.*

Miscellaneous—Toxicity

TUESDAY, 9:00 A.M.—CONGRESS, FRANCIS I ROOM

Chairman: Julius M. Coon

1240. Cathartic actions of FD&C orange no. 1 and other coal tar food dyes. BERT J. VOS, JACK L. RADOMSKI* AND HENRY N. FUYAT.* *Food & Drug Admin.*

1168. Prevention of gastric ulceration with surface coating agents (methylpolysiloxanes). MARK NICKERSON AND CHARLES F. CURRY.* *Univ. of Michigan School of Medicine.*

997. Effects of high and low levels of emulsifiers on rat intensinal flora. A. R. BOURKE* AND O. G. FITZHUGH. *Food and Drug Admin.*

1139. Fixation of metal ions by bone tissue. NORMAN S. MACDONALD (intr. by THOMAS J. HALEY). *Univ. of California School of Medicine at Los Angeles.*

917. Effects of exposure to nickel carbonyl. F. WILLIAM SUNDERMAN AND J. F. KINCAID.* *Jefferson Med. College* (Biochem.).

1238. Distribution and retention of radioberyllium in the lungs of rats following intratracheal injection. C. D. VAN CLEAVE AND C. T. KAYLOR (intr. by T. C. BUTLER). *Univ. of North Carolina School of Medicine.*

1066. Blood and tissue distribution studies on radiogold colloids in dogs. AARON GANZ (intr. by R. A. WOODBURY). *Oak Ridge Inst. and Univ. of Tennessee.*

1188. Action of dimercaprol (I) and of ethylenediamine tetraacetic acid (II) on lead in tissues. FREDERIC RIEDERS (intr. by CHARLES M. GRUBER). *Jefferson Med. College.*

1090. Metabolism of coal-tar dyes, I. Triphenylmethane dyes. S. M. HESS* AND O. G. FITZHUGH. *Food and Drug Admin.*

1078. Chronic inhalation toxicity of aniline vapor to experimental animals. ETHEL B. HACKLEY,* CHARLES C. COMSTOCK* AND FRED W. OBERST. *Chemical Corps Med. Labs.*

1169. Subacute and chronic toxicity of inhaled trifluoromonobromomethane and difluorodibromomethane. FRED W. OBERST AND CHARLES C. COMSTOCK.* *Chemical Corps Med. Labs.*

1257. Isolation and identification of organic poisons by spectrophotometric methods. HAROLD N. WRIGHT, ELEANOR BERMAN* AND GEORGE ROCHE.* *Univ. of Minnesota*

1027. Resinosis, a new industrial hazard? GEORGE P. CHILD AND CORINNE CLANCY.* *White Labs., Inc.*

Special Functions

Tickets for group breakfasts, luncheons and dinners, Society dinners, the Biochemistry-Nutrition Smoker, and the events arranged by the Ladies Entertainment Committee, are on sale at the ticket desk, registration area, Conrad Hilton Hotel.

Tuesday Afternoon, April 7, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Cardiac Drugs II

TUESDAY, 1:15 P.M.—CONGRESS, GOLD ROOM

Chairman: Alfred E. Farah

1119. Use of predictable linearity of spontaneous failure in the dog heart-lung preparation for comparison of the actions of procaine amide and quinidine on cardiac output. VINCENT LANZONI,* IRA M. BARASH* AND BYRON B. CLARK. *Tufts College Med. School.*

980. Comparative cardiovascular activity of three new alkaloids of *veratrum album*. WILLIAM M. ALEXANDER,* ALICE B. RICHARDS* AND BENEDICT E. ABREU. *Pitman-Moore Co.*

1131. Response of severe hypertension to the intramuscular administration of depot Veriloid. W. R. LIVESAY* AND JOHN H. MOYER. *Baylor Univ. College of Medicine*

1242. Reflex respiratory and circulatory activity of phenoxy-alkyl-amines. HARRY A. WALKER, PASSIE S. JONES* AND ARTHUR P. RICHARDSON. *Emory Univ. School of Medicine.*

1085. Intracellular distribution of digitoxin. S. C. HARVEY AND G. R. PIEPER.* *Univ. of Utah College of Medicine.*

1091. Action of lanatoside C on electrocardiogram of isolated guinea pig hearts. W. C. HOLLAND, CLARA E. DUNN* AND MARGARET E. GREIG. *Vanderbilt Univ. School of Medicine.*

1170. Distribution of C^{14}-labeled digitoxin in tissues of cardiac patients. G. T. OKITA AND P. J. TALSO (intr. by E. M. K. GEILING). *Univ. of Chicago.*

1253. Action of iodoacetate on isolated rabbit auricle. M. WILSON,* A. GARDNER* AND A. FARAH. *State Univ. of New York College of Med.*

1182. Effects of methylchloroacetate (MClA) and those of methylfluoroacetate (MFA) on papillary muscle of the cat. JOSEPH REILLY, WILLARD C. WHITEHOUSE,* KANAME KURIAKI* AND WALTER F. RIKER, JR. *Cornell Univ. Med. College.*

1124. Influence of sodium and potassium depletion upon development of experimental cardiovascular injury in the albino rat. DAVID LEHR, JACOB CHURG* AND ROBERT MILORA.* *New York Med. College.*

Central Nervous System Drugs

TUESDAY, 1:15 P.M.—CONGRESS, FLORENTINE ROOM

Chairman: Klaus R. Unna

1231. Pharmacological effects of Reserpin, a new crystallized pure alkaloid from *Rauwolfia serpentina* benth, in the dog. J. H. TRAPOLD,* MELVILLE OSBORNE* AND FREDERICK F. YONKMAN. *Ciba Pharmaceutical Products.*

1177. Sedative and hypnotic action of Reserpin in unanesthetized animals. ALBERT J. PLUMMER, WALTER E. BARRETT,* GILMOUR WAGLE* AND FREDERICK F. YONKMAN. *Ciba Pharmaceutical Products.*

1013. Influence of sympathomimetic amines, isonicotinic acid hydrazide and 1-isonicotinyl-2-isopropyl hydrazine on nicotine-induced rabbit tremors and rat convulsions. RAYMOND L. CAHEN, ARTHUR W. ELIAS* AND PETER J. PARISEK.* *Maltbie Labs., Inc.*

1183. Therapy of resistant schizophrenia with semicarbazide and photic stimulation. RICHARD W. REILLY,* MARIANNE WASSON GUNTHER,* JOSEPH TIENSTRA,* MAHMOOD SAJJADI,* PAUL S. WEINER,* ARTHUR ELLERD,* THEODORE TAUSIG* AND CARL C. PFEIFFER. *Univ. of Illinois College of Medicine and Manteno State Hosp., Manteno.*

999. Locus of emetic action of nitrogen mustard (HN2). E. D. BRAND,* T. D. HARRIS,* L. S. GOODMAN AND H. L. BORISON. *Univ. of Utah College of Medicine*

996. Emetic actions of cardiac glycosides. H. L. BORISON, T. D. HARRIS* AND E. D. BRAND.* *Univ. of Utah College of Medicine.*

1239. Effects of anti-Parkinsonian drugs on tremor monkeys. VERNON G. VERNIER* AND KLAUS R. UNNA. *Univ. of Illinois College of Medicine.*

1228. Comparison of highest and lowest frequency components in the evoked EEG of the rabbit. J. E. P. TOMAN AND G. M. EVERETT. *Michael Reese Hosp. and Abbott Labs.*

1113. Inhibition of phrenic respiratory potentials by adrenaline and other sympathomimetic amines. WILLIAM A. KRIVOY,* E. ROSS HART AND AMEDEO S. MARRAZZI. *Chemical Corps Med. Labs.*

1084. Cerebral synaptic action of amines and quaternary ammonium salts. E. Ross Hart and Amedeo S. Marrazzi. *Chemical Corps Med. Labs.*

1155. Adrenaline in neural tissues. Moritz Michaelis,* Edwin L. Poole,* George D. Price* and Amedeo S. Marrazzi. *Univ. of Maryland and Chemical Corps Med. Labs.*

1206. Effect of barbiturates on neurones sensitized by partial isolation. J. J. Seguin* and G. W. Stavraky. *Univ. of Western Ontario.*

Drug Enzymology

Tuesday, 1:15 p.m.—Congress, Francis I Room

Chairman: Lawrence Peters

1122. Manometric respirometer for muscle tissue allowing simultaneous recording of contraction. Kwang Soo Lee (intr. by Charles M. Gruber, Jr.). *Jefferson Med. College.*

1250. Improved stationary micro-respirometer for isolated mammalian muscle. James R. Weeks and Takashi Kariya (intr. by Maynard B. Chenoweth). *Drake Univ. College of Pharmacy.*

1054. Effect of hypophysectomy and growth hormone on the *p*-aminohippurate of rat kidney slices. A. Farah, G. Graham* and F. Koda.* *State Univ. of New York College of Medicine at Syracuse.*

1071. Influence of fluoroacetate on renal acid secretion. G. Graham,* F. Koda* and A. Farah. *State Univ. of New York College of Medicine at Syracuse.*

1172. Mechanism of the renal toxicity of cyanine dyes. Lawrence Peters and Mary L. Woehrmann.* *Western Reserve Univ. School of Medicine.*

1044. Renal tubular transport of *p*-aminohippurate as affected by malonate and antimycin A. Abel M. Dominguez* and F. E. Shideman. *Univ. of Wisconsin Med. School.*

1173. Effects of sublethal doses of x-ray on phosphatases of animal tissues. Donald F. Petersen,* Jere Deroin* and Kenneth P. DuBois. *USAF Radiation Lab. and Univ. of Chicago.*

1009. Citric acid intoxication during transfusion of banked blood in man. J. P. Bunker,* W. R. Brewster, Jr.* and H. K. Beecher. *Harvard Med. School.*

1143. Citrate accumulation in certain tissues of ethanol intoxicated rats. Samuel Mallov* and Jay Tepperman. *State Univ. of New York College of Medicine at Syracuse.*

537. Citrate metabolism as affected by fluoroacetate and effect of citrate on fluoroacetate toxicity. Ernest C. Adams, Jr.* and Alfred H. Free. *Miles-Ames Research Lab.* (Biochem.)

1116. Purification and properties of glycolic acid dehydrogenase of animal origin. Ernest Kun. *Tulane Univ.*

1223. Enzymatic studies of histidine degradation. Herbert Tabor and Alan H. Mehler.* *Natl. Insts. of Health.*

979. Biological utilization of *L*-histidinol. Elij[illegible] Adams,* Hugo Bauer,* Herbert Tabor a[illegible] Alan H. Mehler.* *Natl. Insts. of Health.*

Pharmacology Society Business Meeting

Tuesday, 4:00 p.m.—Congress, Florentine Room

Joint Session of the Federation

Tuesday, 8:30 p.m.—Conrad Hilton, Grand Ballroom

Program on pag 477

Wednesday Morning, April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract Part 1.

Potent Analgesics

WEDNESDAY, 9:00 A. M.—CONGRESS, GOLD ROOM

Chairman: Desmond D. Bonnycastle

1237. Effects of l-isomethadone and dl-alpha acetylmethadol on intestinal motility in rat and rabbit. WILLIAM C. VAN ARSDEL, IIIRD* AND NORMAN A. DAVID. *Univ. of Oregon Med. School.*

1219. Fate of levo-rotatory α-acetylmethadol. CHEN-YU SUNG* AND E. LEONG WAY. *College of Pharmacy and School of Medicine, Univ. of California, San Francisco.*

1114. Codeine destruction rates from the data of Adler and Latham. HUGO KRUEGER. *Oregon State College.*

1153. Plasma levels and urinary excretion of free and bound morphine in nontolerant monkeys. L. B. MELLETT,* L. A. WOODS AND M. H. SEEVERS. *Univ. of Michigan.*

1041. Determination of *in vitro* disappearance of added morphine effected by minced tissues of morphine-tolerant rats during withdrawal. G. A. DENEAU,* L. A. WOODS AND M. H. SEEVERS. *Univ. of Michigan.*

1245. Locus of emetic action of morphine and Hydergine in dogs. S. C. WANG AND VINCENT V. GLAVIANO.* *Columbia Univ. College of P. & S.*

1097. Addiction liability of dithienylbutylamines. H. ISBELL, H. F. FRASER, AND A. WIKLER. *Public Health Service Hosp., Lexington.*

654. 17-ketosteroid excretion in a cycle of morphine addiction and withdrawal. ANNA J. EISENMAN, H. ISBELL,* H. F. FRASER* AND JEWELL SLOAN.* *Public Health Service Hosp.* (Biochem.)

1158. *In vitro* studies on diphasic action of methadone. J. W. MILLER* AND H. W. ELLIOTT. *Univ. of California School of Medicine, San Francisco.*

1252. Effect of morphine and of meperidine upon respiratory response of normal men to low concentrations of inspired CO_2. H. WENDEL, H. H. LOESCHCKE, A. SWEEL, R. H. KOUGH AND C. J. LAMBERTSEN (intr. by P. R. DUMKE). *Univ. of Pennsylvania.*

1243. Changes in pain intensity as a means of estimating analgetic power. STANLEY L. WALLENSTEIN AND RAYMOND W. HOUDE (intr. by DONALD A. CLARKE). *Memorial Cancer Center.*

1095. Method of screening analgetics in cancer patients. RAYMOND W. HOUDE AND STANLEY L. WALLENSTEIN (intr. by DONALD A. CLARKE). *Memorial Cancer Center.*

CNS Drugs and Local Anesthetics

WEDNESDAY, 9:00 A.M.—CONGRESS, FLORENTINE ROOM

Chairman: Benedict A. Abreu

1003. Pharmacologic studies on alpha-(2-Piperidyl)-benzhydrol·HCl, a new type of central stimulant. BARBARA B. BROWN AND HAROLD W. WERNER. *Wm. S. Merrell Co.*

1230. Effects of adenosinetriphosphate on electroencephalographic changes induced by convulsants. CLARA TORDA. *Cornell Univ. Med. College and New York Hosp.*

1031. Decaborane poisoning and its possible therapy. VERSA V. COLE, DAVID L. HILL* AND AILI H. OIKEMUS.* *Chemical Corps Med. Labs.*

1045. Effects of central nervous system stimulants on x-ray lethality. JOHN DOULL* AND KENNETH P. DUBOIS. *USAF Radiation Lab. and Univ. of Chicago.*

1160. Effects of drugs on irradiation of cerebral cortical electrical responses in the rabbit. GEORGE MISRAHY* AND J. E. P. TOMAN. *Univ. of Chicago and Michael Reese Hosp.*

1186. *In vitro* substrate competition between procaine and succinylcholine for plasma cholinesterase. DAVID H. RHODES, JR. AND FRANCIS F. FOLDES. *Mercy Hosp. and Montefiore Hosp.*

1039. Sex variation in hydrolysis rate of procaine in human plasma. DAVID L. DAVIS,* JOSE M. BORREGO-HINOJOSA* AND FRANCIS F. FOLDES. *Mercy Hosp. and Univ. of Pittsburgh.*

986. Hydrolysis of procaine in various mammalian plasmas. MANUEL H. AVEN,* AMOS LIGHT* AND FRANCIS F. FOLDES. *Mercy Hosp. and Wellcome Research Lab.*

1128. Disappearance of tetracaine from the subarachnoid space. ELI LIPSCHITZ,* DAVID L. DAVIS* AND FRANCIS F. FOLDES. *Mercy Hosp. and Univ. of Pittsburgh School of Medicine.*

1135. Urethral anesthesia in rabbits. F. P. LUDUENA AND THEODORE G. BROWN, JR.* *Sterling-Winthrop Research Inst.*

1005. Penetrance of local anesthetics. THEODORE G. BROWN, JR.* AND F. P. LUDUENA. *Sterling-Winthrop Research Inst.*

Chemotherapy

WEDNESDAY, 9:00 A.M.—CONGRESS, FRANCIS I ROOM

Chairman: Sanford M. Rosenthal

1022. Certain pharmacologic properties of 1-sulfanilyl-2-thiocarbamide, a sulfonamide derivative. JAMES Y. P. CHEN, O. D. PRIDDLE,* J CRAWFORD* AND R. BOSCHETTI.* *Schenley Labs.*

1004. *In vitro* antagonism of pantothenic acid, β-alanine and *l*-carnosine to inhibitory effects of erythromycin on growth of *Corynebacterium diphtheriae*. ROBERT G. BROWN* AND G. A. EMERSON. *Univ. of Texas Med. Branch.*

1203. Effects of isoniazid on tuberculosis in the rhesus monkey. L. H. SCHMIDT AND PAUL N. JOLLY.* *Christ Hosp., Cincinnati.*

1147. C^{14} isoniazid concentration in normal and tuberculous tissues. R. W. MANTHEI, L. J. ROTH, W. R. BARCLAY, R. H. EBERT (intr. by E. M. K. GEILING). *Univ. of Chicago.*

1211. Metabolism of two isotopically labeled pentaquine salts. CARL C. SMITH. *Christ Hosp., Cincinnati.*

1015. Effect of oxophenarsine on the phospholipid metabolism of *Trypanosoma equiperdum* in the rat. WILLIAM CANTRELL (intr. by P. K. KNOEFEL). *Univ. of Louisville School of Medicine.*

1181. Toxic effects of synthetic and fermentation chloramphenicol in dogs. Preliminary report. JACK L. RADOMSKI* AND ARTHUR A. NELSON. *Food and Drug Admin.*

991. Incorporation of 8-azaguanine-2-C^{14} into 8-azaguanine-susceptible and 8-azaguanine dependent leukemic tumors. LEONARD L. BENNETT, JR., HOWARD E. SKIPPER AND L. W. LAW (intr. by FREDERICK S. PHILLIPS). *Southern Research Inst. and Natl. Insts. of Health.*

1016. Synergistic toxic effects of 8-azaguanine and 4-amino-5-imidazolecarboxamide. PIERRE-EM. CARLÓ,* H. GEORGE MANDEL* AND PAUL K. SMITH. *George Washington Univ. School of Medicine.*

1241. Influence of tumor extracts on the distribution pattern of radioactive colchicine in mice. E. J. WALASZEK AND A. BACK (intr. by E. M. K. GEILING). *Univ. of Chicago.*

1042. Distribution of nitrogen assimilated by *Pseudomonas aeruginosa*. WM. E. DE TURK (intr. by FREDERICK BERNHEIM). *Duke Univ. School of Medicine.*

1012. Survival of *E. coli* 'B' and of the 'T' coliviruses in the frozen state. MILTON T. BUSH, THERESA RAINEY* AND JEAN E. BROCKMAN.* *Vanderbilt Univ. School of Medicine.*

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*

Members and guests of all Societies are cordially welcome.

Wednesday Afternoon, April 8, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Barbiturates

WEDNESDAY, 1:15 P.M.—CONGRESS, GOLD ROOM

Chairman: Charles M. Gruber

1174. Study of certain N-alkyl thiobarbiturates. R. C. PETERSON,* J. J. BURNS,* ELEONORE BERNSTEIN,* P. LIEF, E. M. PAPPER AND B. B. BRODIE. *New York Univ. and Natl. Insts. of Health.*

1227. Biologically prepared radioactive indicators in a study of metabolism of pentobarbital. ELWOOD TITUS AND HERBERT WEISS (intr. by BERNARD B. BRODIE). *Natl. Insts. of Health.*

1101. Effects of dimercaprol on pentobarbital blood levels in the mouse. J. B. KAHN, JR. (intr. by G. H. ACHESON). *Univ. of Cincinnati College of Medicine.*

1234. Influence of testosterone on the destruction of pentobarbital sodium. JAMES R. TUREMAN,* WALTER M. BOOKER, ARNOLD H. MALONEY, CLEO FROIX* AND WILLIAM M. JONES.* *Howard Univ. Med. School.*

1224. Effect of nephrectomy on the sleeping time and plasma binding of barbiturates in the rabbit. J. D. TAYLOR,* R. K. RICHARDS, JEANNE C. DAVIN* AND JANE ISOSHIMA.* *Abbott Labs.*

1061. Chronic barbiturate intoxication. H. F. FRASER, H. ISBELL, A. WIKLER, AND F. PESCOR.* *Public Health Service Hosp., Lexington.*

280. Effect of nutritional state on response to thiopental. H. A. LEVY,* J. R. DIPALMA AND C. ALPER.* *Hahnemann Med. College* (Physiol.)

400. Physiopathology of detoxification of pentobarbital sodium (Nembutal). STELIOS C. SAMARAS AND NICHOLAS DIETZ, JR. (intr. by FRANKLIN C. MCLEAN). *Creighton Univ. School of Medicine.* (Physiol.)

782. Removal of barbiturates from the blood by means of the artificial kidney. JACK R. LEONARDS AND IRVING SUNSHINE.* *Western Reserve Univ. and Cuyahoga Co. Coroners Lab.* (Biochem.)

320. Absorption and excretion of chloral hydrate. ARTHUR E. MEYER AND MARTHA L. SMITH.* *Fellows Pharmaceutical Labs.* (Physiol.)

Autonomic Agents I

WEDNESDAY, 1:15 P.M.—CONGRESS, FLORENTINE ROOM

Chairman: Mark Nickerson

1205. Antispasmodic activity of epoxytropine tropate methylbromide (Pamine ® Bromide). P. H. SEAY,* WILLIAM VELDKAMP,* B. E. GRAHAM,* W. B. BASS* AND M. J. VANDER BROOK. *The Upjohn Co.*

486. Gastric antisecretory and other actions of epoxytropine tropate methyl bromide (Pamine** Bromide). FRANK E. VISSCHER, M. J. VANDER BROOK AND ADRIAN P. TAZELAAR, JR.* *The Upjohn Co.* (Physiol.)

1232. Isolated intestine assay for atropine-like drugs using dose-response curve for acetylcholine. EDWARD B. TRUITT, JR.,* H. TORREY BLOODWORTH,* J. ALTON HILL* AND J. MAXWELL LITTLE. *A. H. Robins Co. and Bowman Gray School of Medicine.*

1026. Pharmacologic characteristics of 2-diethylaminoethyl alpha-(2 cyclopenten-1-yl) hydrochloride (Neotropine hydrochloride, or W-290), a new antispasmodic agent. MAX CHESSIN,* MARY N. LEWIS* AND JOHN F. REINHARD. *Warner-Chilcott Research Labs.*

1246. Comparison of activities of five antispasmodics. JOHN W. WARD,* EDWIN H. GRAY* AND LLOYD W. HAZLETON. *Hazleton Labs.*

119. Antispasmodic action of quaternary derivatives of B-hydroxy acids. MELVIN H. EHRENBERG* AND E. W. BLANCHARD. *Schieffelin & Co.* (Physiol.)

1058. Ganglionic blocking action of methylatropine and atropine. LEWIS D. FINK AND PETER CERVONI (intr. by TED A. LOOMIS). *Univ. of Washington, School of Medicine.*

1184. Pharmacologic properties of tris-(2-diethylaminoethyl)-amine trihydrochloride, a ganglionic blocking agent. WILLIAM R. REITZE,* ALBERT J. PLUMMER AND WALTER E. BARRETT.* *Ciba Pharmaceutical Products.*

1068. Ganglionic blocking activities of two optical isomers. SHELDON B. GERTNER (intr. by DESMOND D. BONNYCASTLE). *Yale Univ. School of Medicine.*

1236. Pharmacology of N-diethylaminoethyl-N'-methyl-benzilamide methobromide. RICHARD C. URSILLO,* RUTH MITCHELL,* ELIZABETH GRACE* AND BYRON B. CLARK. *Tufts College Med. School.*

1102. Factors controlling responses to cholinergic agents. ALEXANDER G. KARCZMAR,* GUY C. SHEATZ* AND THEODORE KOPPANYI. *Georgetown Univ. School of Medicine.*

995. Effects of Panparnit on sympathetic ganglia. II. DONALD F. BOGDANSKI AND ALEXANDER G. KARCZMAR (intr. by THEODORE KOPPANYI). *Georgetown Univ. School of Medicine.*

231. Comparison of the pharmacological action of several derivatives of aminoethylphenothiazine. D. E. HUTCHEON (intr. by L. B. JAQUES). *Univ. of Saskatchewan.* (Physiol.)

Antipyretics: Histamine

WEDNESDAY, 1:15 P.M.—CONGRESS, FRANCIS I. ROOM

Chairman: E. F. Van Maanen

1086. Effect of some antipyretic drugs on glycosuria of alloxan diabetic rats. ANDREW T. HASEGAWA* AND CARL C. PFEIFFER. *Univ. of Illinois College of Medicine.*

1033. Action of salicylates and related compounds on carbohydrate metabolism and on adrenal ascorbic acid and cholesterol concentrations. GLORIA M. COMULADA,* PIERRE-EM. CARLÓ* AND PAUL K. SMITH. *George Washington Univ. School of Medicine.*

1087. Toxicity of phenylbutazone (butazolidin). LLOYD W. HAZLETON, THOMAS W. TUSING* AND EMILY G. HOLLAND.* *Hazleton Labs.*

1077. Response of experimental arthritis with different levels of pharmacological integration in the rat. F. GUERRA. *Universidad Nacional de México.*

1137. Action of mephenesin on body temperature. THOMAS E. LYNES* AND F. M. BERGER. *Wallace Labs., Inc.*

1118. Enzymatic dealkylation of aminopyrine and other alkylamines *in vitro*. BERT N. LA DU, JR.,* NATALIE TROUSOF* AND BERNARD B. BRODIE. *New York Univ. and Natl. Insts. of Health.*

1011. Physiological disposition of phenylbutazone (butazolidin), a new antirheumatic agent. J. J. BURNS,* ROSE K. ROSE,* T. CHENKIN,* A. GOLDMAN,* A. SCHULERT* AND B. B. BRODIE. *New York Univ. and Natl. Insts. of Health.*

1025. Physiological effects of phenylbutazone (butazolidin) in man. THEODORE CHENKIN,* BERNARD B. BRODIE, PHILIP LEE,* J. J. BURNS,* EDWARD W. LOWMAN,* A. GOLDMAN* AND J. MURRAY STEELE.* *New York Univ. and Natl. Insts. of Health.*

1036. Intracellular distribution of histamine. J. H. COPENHAVER, JR.,* MARY E. NAGLER* AND ANDRES GOTH. *Southwestern Med. School.*

1149. Propyl-thiouracil induced changes in histamine tolerance of intact and adrenalectomized rats. CONSTANCE R. MARTIN, RAYMOND R. SACKLER, ARTHUR M. SACKLER AND MORTIMER D. SACKLER (intr. by C. Co Tui). *Creedmor Inst.*

1196. Effect of thymectomy on histamine tolerance of albino rats. ARTHUR M. SACKLER, MORTIMER D. SACKLER, CONSTANCE R. MARTIN AND RAYMOND R. SACKLER (intr. by C. Co Tui). *Creedmoor Inst.*

1197. Effect of gonadectomy on histamine tolerance. MORTIMER D. SACKLER, ARTHUR M. SACKLER, CONSTANCE R. MARTIN AND RAYMOND R. SACKLER (intr. by C. Co Tui). *Creadmore Inst.*

Pharmacology Society Dinner

WEDNESDAY, 7:00 P.M.—CONGRESS, GOLD ROOM

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Autonomic Agents II

THURSDAY, 9:00 A.M.—CONGRESS, FLORENTINE ROOM

Chairman: Gordon K. Moe

992. Propagation of electrical waves produced by acetylcholine or other neuro-hormones, along an extended contact surface. R. BEUTNER. *Univ. of Arkansas, School of Medicine.*

1076. Epinephrine-induced vasodilator reflex. C. GRUHZIT* AND G. MOE. *State Univ. of New York Med. College at Syracuse.*

414. Cutaneous responses to sympathetic amines and blockade interpreted in terms of a biochemical hypothesis. ALFRED A. SCHILLER. *Univ. of Illinois College of Medicine.* (Physiol.)

1051. Are effects of epinephrine on carbohydrate metabolism and on mechanical activity of muscle independent phenomena? SYDNEY ELLIS. *Temple Univ. School of Medicine.*

1251. Localization of epinephrine in adrenal cytoplasmic particles. A. D. WELCH AND H. BLASCHKO.* *Oxford Univ.*

1156. Effect of adenosine analogs on intestinal contractility *in vitro*. ENRICO MIHICH,* DONALD A. CLARKE AND FREDERICK S. PHILIPS. *Univ. of Milan and Sloan-Kettering Inst.*

1225. Sympathomimetic activity of certain aldehydes. R. S. TEAGUE AND CHRISTIAN WINGARD.* *Med. College and School of Dentistry, Univ. of Alabama.*

1074. Effect of sympathomimetic amines and cocaine hydrochloride on intact intestine. CHARLES M. GRUBER AND RICHARD J. MATTHEWS, JR.* *Jefferson Med. College.*

1134. Comparison of the bronchodilator activities of l-epinephrine and l-norepinephrine. F. C. LU, R. J. DENOMMEE* AND M. G. ALLMARK.* *Dept. of Natl. Health and Welfare, Ottawa.*

1226. Observations on the metabolism of nicotine in the dog. R. E. TEDESCHI,* D. R. BENNETT* AND P. S. LARSON. *Med. College of Virginia.*

1053. Distribution and excretion of radioactivity in mice following the administration of C^{14}-labeled atropine. VALESKA EVERTSBUSCH* AND E. M. K. GEILING. *Univ. of Chicago.*

156. Distribution, detoxification and excretion of radioactive Pyribenzamine in guinea pigs. T. A. GEISSMAN AND ERNEST O. WEINMAN (intr. by T. L. JAHN). *Univ. of California at Los Angeles.* (Physiol.)

Renal Agents

THURSDAY, 9:00 A.M.—BLACKSTONE, HUBBARD ROOM

Chairman: Earl H. Dearborn

1096. Changes in urine secretion during diffusion respiration following apnea induced by intracisternal injection of procaine. RICHARD L. IRWIN,* JOSEPH E. STONE,* WILLIAM B. DRAPER AND RICHARD W. WHITEHEAD. *Univ. of Colorado, Med. Center.*

1185. Effect of Apresoline (1-Hydrazinophthalazine) on experimental 'eclampsia-like' syndrome and on related aspects of water metabolism. A. A. RENZI AND ROBERT GAUNT (intr. by F. F. YONKMAN). *Ciba Pharmaceutical Products.*

994. Renal hemodynamics as influenced by histamine. WILLIAM P. BLACKMORE* AND THEODORE R. SHERROD. *Univ. of Illinois College of Medicine.*

1208. Effects of Thiomerin on denervated kidneys. H. SHUFFLEBARGER* AND P. K. KNOEFEL. *Univ. of Louisville.*

1151. Renal function as influenced by the inhalation of carbon tetrachloride. B. J. MCINTOSH* AND P. K. KNOEFEL. *Univ. of Louisville.*

993. Darstine®: Interrelationship of renal tubular secretion and tissue sequestration in the physiological economy of a quaternary anticholinergic agent, 1-(3-hydroxy-5-methyl-4-phenylhexyl)-1-methylpiperidinium bromide. KARL H. BEYER, ELIZABETH K. TILLSON,* HORACE F. RUSSO,* JACQUELINE K. FISHMAN* AND FRANCIS T. BRENNAN.* *Sharp and Dohme.*

1060. Renal hemodynamics and water electrolyte excretion as affected by hexamethonium and the ambulatory state in chronically treated hypertensives. RALPH V. FORD,* JOHN H. MOYER, CHARLES L. SPURR* AND CARROLL A. HANDLEY. *Baylor Univ. College of Medicine and VA Hosp.*

1164. Renal hemodynamic effects of Aramine. JOHN H. MOYER AND W. R. LIVESAY.* *Baylor Univ. College of Medicine.*

1144. Renal excretion of creatinine and inulin. EMANUEL E. MANDEL, WALTER H. CARGILL AND FLORENCE L. JONES (intr. by H. D. BRUNER).

Communicable Disease Center and Emory Univ. School of Medicine.

1209. Diuretic effect of oral diethyl-aminoethyl-theophylline hydrochlorate used alone and with an oral mercurial compound in congestive heart failure. C. CLARKE SILVERTHORNE* AND JOHN H. MOYER. *Baylor Univ. College of Medicine.*

1130. Effects of altered adrenal cortical activity on renal function. J. MAXWELL LITTLE, ERNEST H. YOUNT* AND WESTON M. KELSEY.* *A. H. Robins Co. and Bowman Gray School of Medicine.*

1023. Renal excretion of calcium. PHILIP S. CHEN (intr. by W. E. NEUMAN). *Univ. of Rochester School of Medicine.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Physiology Lounge

EXHIBITION HALL, PALMER HOUSE. *Open Tuesday through Friday.*

Members and guests of all Societies are cordially welcome.

Lost and Found Articles

Inquire at the Federation Office, Conrad Hilton Hotel.

Thursday Afternoon, April 9, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*

For complete institutional connection and address see abstract, Part I.

Autonomic Agents III

THURSDAY, 1:15 P.M.—CONGRESS, FLORENTINE ROOM

Chairman: Walter E. Hambourger

1213. Results with parenterally, orally and sublingually administered dihydrogenated ergot (Hydergine, CCK-179) in treatment of hypertension. HARVEY B. SNYDER AND ROBERT L. HERSHBERGER (intr. by RUSSELL A. HUGGINS). *Baylor Univ. College of Medicine.*

1248. Effects of Dibenamine and Dibenzylene in normal and in mechanical heart-lung dogs. RUSSELL A. WAUD AND ROBERT LEWIS.* *Univ. of Western Ontario Med. School.*

1103. Effect of Dibenzylene (SKF 688A) as a sympathetic blocking agent. E. F. KEITH,* R. G. UNDERDAL* AND B. DEBOER. *Univ. of North Dakota School of Medicine.*

1073. Effects of denervation on actions of antiadrenergic drugs. PAUL P. GRIFFIN,* HAROLD D. GREEN, PAUL YOUMANS* AND HOOPER D. JOHNSON.* *Bowman Gray School of Medicine.*

1065. Dibenamine as an antagonist of sympathomimetics, histamine and acetylcholine in arterial strips. ROBERT F. FURCHGOTT. *Washington Univ. School of Medicine.*

1092. Prevention of thyroxine-induced increased oxygen consumption of rats by concurrent 'Dibenzyline' administration. DORSEY E. HOLTKAMP AND ARTHUR E. HEMING (intr. by EDWIN J. FELLOWS). *Smith, Kline & French Labs.*

1148. New adrenergic blocking agents. Cardiovascular activity of some N,N¹-disubstituted ethylenediamines and piperazines. DAVID F. MARSH AND JOHN F. O'LEARY.* *McNeil Lab.*

1126. Effects of adrenergic blocking agents in tumbling shock in the rat. E. Z. LEVY,* W. C. NORTH* AND J. A. WELLS. *Northwestern Univ. Med. School.*

1136. Dose response of plasma substitutes in experimental traumatic shock. L. M. LUSKY,* H. A. BRAUN AND ARTHUR A. NELSON. *Food and Drug Admin.*

1159. Histochemical and urinary excretion studies of dextrans in normal and shocked mice. R. CARL MILLICAN AND ROBERT W. MOWRY.* *Natl. Insts. of Health and Washington Univ.*

Anesthetics: Serotonin

THURSDAY, 1:15 P.M.—BLACKSTONE, BALL ROOM

Chairman: Milton J. Vander Brook

1175. Sedative-hypnotic properties of 2-ethylcrotonylurea. MERLE H. PINDELL,* OTIS E. FANCHER* AND ROBERT K. S. LIM. *Miles-Ames Research Lab.*

1018. Anesthetic properties of trifluoroethyl vinyl ether. C. JELLEFF CARR, GO LU, FREDERICK K. BELL* AND JOHN C. KRANTZ, JR. *Univ. of Maryland School of Medicine.*

1017. Respiratory and circulatory dynamics during inhalation anesthesia. S. L. CARPENTER,* DUNCAN A. HOLADAY* AND E. M. PAPPER. *Columbia Univ. and Presbyterian Hosp.*

1063. Respiratory and metabolic responses to cyclopropane anesthesia in man. M. J. FRUMIN,* HERMAN SCHWARTZ,* CARTER BALLINGER,* D. A. HOLADAY* AND E. M. PAPPER. *Columbia Univ. and Presbyterian Hosp.*

1247. Adrenalectomy and ether hyperglycemia in rats. D. T. WATTS. *Univ. of Virginia Med. School.*

1002. Cardiac output of the dog during ether anesthesia: role of reflexly released epinephrine and nor-epinephrine in antagonizing the direct myocardial depression of diethyl ether. WILLIAM R. BREWSTER, JR. AND JAMES P. ISAACS (intr. by HENRY K. BEECHER). *Harvard Med. School.*

418. Action of Serotonin (5-hydroxytryptamine) on vagal afferent impulses in the cat. JÜRG A. SCHNEIDER AND FREDERICK F. YONKMAN (intr. by W. W. SWINGLE). *Ciba Pharmaceutical Products.* (Physiol.)

1057. Hydroxytryptamine blockade by dihydroergotamine *in vitro*. E. FINGL* AND J. H. GADDUM. *Univ. of Edinburgh.*

968. Yohimbine and ergotoxin as naturally-occurring antimetabolites of Serotonin. D. W. WOOLLEY AND E. SHAW.* *Rockefeller Inst.* (Biochem.)

932. Hydroxylation of the 5-position of tryptophan as the first step in its metabolic conversion to 5-hydroxytryptamine (Serotonin). SIDNEY UDENFRIEND, CARROLL T. CLARK* AND ELWOOD TITUS.* *Natl. Insts. of Health.* (Biochem.)

Alcohol: Bioassay

THURSDAY, 1:15 P.M.—BLACKSTONE, HUBBARD ROOM

Chairman: W. J. R. Camp

1255. Sulfobromophthalein clearance in white rats after damage to liver. PETER Y. WONG,* CHARLES D. CHAMBERLAIN, JR.,* MELVIN SCHADEWALD,* JOE B. NASH* AND G. A. EMERSON. *Univ. of Texas Med. Branch.*

1050. Comparative effects of tetraethylthiuram disulfide and diethyldithiocarbamic acid on ethanol metabolism. FRED W. ELLIS. *Univ. of North Carolina School of Medicine.*

1029. Antabuse-alcohol reaction produced by charcoal-alcohol. WM. C. CLARK* AND H. R. HULPIEU. *Indiana Univ. School of Medicine.*

1083. Methods to evaluate in rats the antipathy to alcohol produced by antabuse and related compounds. WILLIAM D. HARKNESS, CARTER D. JOHNSTON AND GEOFFREY WOODARD (intr. by A. J. LEHMAN). *Food & Drug Admin.*

1099. Role of CS_2 in the antabuse-induced potentiation of barbiturate action in the rat. CARTER D. JOHNSTON, WILLIAM D. HARKNESS AND GEOFFREY WOODARD (intr. by BERT J. VOS). *Food & Drug Admin.*

1166. Effects of feeding single fatty acids on voluntary alcohol preference of white rats. JOE B. NASH,* G. A. EMERSON, W. T. MOORE* AND B. M. MOORE.* *Univ. of Texas Med. Branch.*

1019. Effects of pregnancy and lactation on voluntary alcohol intake of hamsters. JOE WILBUR CARVER,* JOE B. NASH,* G. A. EMERSON AND W. T. MOORE.* *Univ. of Texas Med. Branch.*

1201. Voluntary preference for alcohol of white rats after gonadectomy. MELVIN SCHADEWALD,* G. A. EMERSON, W. T. MOORE* AND B. M. MOORE.* *Univ. of Texas Med. Branch.*

1020. Dose-effect relation: critique of estimation of mass of biological material. CHARLES D. CHAMBERLAIN, JR.,* CHAUNCEY D. LEAKE AND G. A. EMERSON. *Univ. of Texas Med. Branch.*

1072. Control rats in chronic feeding experiments. EDWIN H. GRAY* AND LLOYD W. HAZLETON. *Hazleton Labs.*

Pharmacology Society Business Meeting

THURSDAY, 4:00 P.M.—CONGRESS, FLORENTINE ROOM

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Program on page 477

Friday Morning, April 10, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Blood: Metabolism

FRIDAY, 9:00 A.M.—CONRAD HILTON, LOWER TOWER ROOM

Chairman: Lloyd D. Seager

1235. Variations in hemolytic and antihemolytic agents in various liver fractions of differently raised guinea pigs. DAVID B. TYLER. *Univ. of Puerto Rico School of Medicine.*

1056. Separation and mode of action of thromboplastic cytozyme. SILVIO FIALA (intr. by F. M. BERGER). *Albert Einstein Med. Center.*

1133. Heparin-like anticoagulant action of sulfonated lignins from commercial waste sulfite liquor. TED A. LOOMIS. *Univ. of Washington School of Medicine.*

1189. Effect of heparin on angina of effort. SEYMOUR H. RINZLER, JANET TRAVELL, HYMAN BAKST,* ZACHARY H. BENJAMIN,* ROBERT L. ROSENTHAL,* SIDNEY ROSENFELD* AND BARBARA B. HIRSCH.* *Cornell Univ. Med. College and Beth Israel Hosp.*

1157. Interaction of heparin and adenosine-5-monophosphate in hyperlipoproteinemic rabbits. LAWRENCE J. MILCH (intr. by HERMAN I. CHINN). *USAF School of Aviation Medicine.*

1075. New prothrombin time technique. CHARLES M. GRUBER, JR. AND ZINAIDA LASZICZENKO.* *Jefferson Med. College.*

1121. *In vitro* hemolysis of dog erythrocytes by methylene blue. I. F. J. LEARY,* J. F. COLLINS,* A. B. VIALPANDO* AND H. C. STRUCK. *Creighton Med. School.*

983. Role of the lungs in the fate of white blood cells. J. L. AMBRUS, C. M. AMBRUS, E. W. PACKMAN, G. C. JOHNSON, N. BACK, W. CHERNICK AND J. W. E. HARRISSON (intr. by C. M. GRUBER). *Philadelphia College of Pharmacy and Science and Jefferson Med. College.*

1244. Leukocyte response to pyrogen as an indicator of bone marrow depression. RICHARD I. H. WANG* AND J. A. WELLS. *Northwestern Univ. Med. School.*

1046. Effect of soy sterols on cholesterol atherosclerosis in rabbits. ROBERT H. DREISBACH, BEVERLY BROWN,* ROBERT B. MYERS* AND WINDSOR C. CUTTING. *Stanford Univ. School of Medicine.*

1132. Weight changes in dying tissues, and following ultrafreezing. CHARLES N. LOESER* AND TORALD SOLLMANN. *Western Reserve Univ. School of Medicine.*

Curare

FRIDAY, 9:00 A.M.—BLACKSTONE, BALLROOM

Chairman: David F. Marsh

1215. Modification of the U.S.P. tubocurarine chloride assay. S. E. SRENSEK AND GEOFFREY WOODARD (intr. by A. J. LEHMAN). *Food and Drug Admin.*

990. Simple method of appraising neuromuscular blocking drugs in the unanesthetized dog. WALTER E. BARRETT, FREDERICK F. ANDERSON AND RICHARD A. RUTLEDGE (intr. by FREDERICK F. YONKMAN). *Ciba Pharmaceutical Products.*

1202. Curarizing action of cobra venom. J. L. SCHMIDT, E. L. GOODSELL AND K. E. KUETER (intr. by R. K. RICHARDS). *Abbott Labs.*

1106. Curariform activity of a homologous series of monoquaternary salts of N-(ω-dialkylaminoalkyl)-phthalimides. KAZUO K. KIMURA, PAUL M. LISH* AND HUGH B. DONAHOE.* *St. Louis Univ.*

1129. Parasympathomimetic activity and synergism with neostigmine of compounds possessing curariform activity. PAUL M. LISH,* KAZUO K. KIMURA AND HUGH B. DONAHOE.* *St. Louis Univ.*

1190. Pharmacology of tris (beta-diethylaminoethoxy) benzene trihydrochloride, an analogue of Flaxedil. JAY ROBERTS,* WALTER F. RIKER, JR. AND B. B. ROY.* *Cornell Univ. Med. College.*

1093. Bis N-triethyl versus Bis N-trimethyl substitution in benzoquinonium chloride. JAMES O. HOPPE, JOSEPH E. FUNNELL* AND HARLAN LAPE.* *Sterling-Winthrop Research Inst.*

1112. Relative resistance of contracting frog rectus to curare-like influences. CHARLES P. KRAATZ AND JOAN E. COPELAND.* *Jefferson Med. College*

1152. TEPP and skeletal muscle fasciculation. B. P. MCNAMARA, E. F. MURTHA,* L. J. EDBERG,* A. D. BERGNER* AND J. H. WILLS. *Chemical Corps Med. Labs.*

1233. Hydrolysis of succinylcholine in human plasma. FREDERICK J. TSUJI* AND FRANCIS F. FOLDES. *Mercy Hosp. and Montefiore Hosp.*

1059. Enzymatic hydrolysis and neuromuscular activity of succinyl-monocholine iodide. FRANCIS F. FOLDES AND FREDERICK J. TSUJI.* *Mercy Hosp. and Montefiore Hosp.*

121. Succinylcholine antagonists. C. H. ELLIS, A. L. WNUCK* AND E. J. DE BEER.* *Wellcome Research Labs.* (Physiol.).

Hormone Effects

FRIDAY, 9:00 A.M.—BLACKSTONE, HUBBARD ROOM

Chairman: Victor A. Drill

1207. Effects of potassium infusion and adrenalectomy on liver glycogen. RICHARD A. SEIBERT* AND RUSSELL A. HUGGINS. *Baylor Univ. College of Medicine.*

1100. Implication of potentiation of adrenal hormones by ascorbic acid. WILLIAM M. JONES,* FRANCES DACOSTA,* CLEO FROIX,* A. H. MALONEY AND WALTER M. BOOKER. *Howard Univ. Med. School.*

1008. Distribution of radioactive estrone 16-C^{14} in mice. ANN M. BUDY (intr. by FRANKLIN C. MCLEAN). *USAF Radiation Lab. and Univ. of Chicago.*

1055. Assay of thyrotropic hormone using I^{131} in intact guinea pigs. J. K. W. FERGUSON, W. PAUL* AND D. M. YOUNG.* *Univ. of Toronto.*

1088. Comparative effects of thyroxine and triiodothyronine on oxygen consumption of rats. ARTHUR E. HEMING AND DORSEY E. HOLTKAMP (intr. by EDWIN J. FELLOWS). *Smith, Kline & French Labs.*

1145. Comparative changes in adrenal function as induced by treatment with Amphenone 'B' and with estradiol. LEO F. MANSOR, DORSEY E. HOLTKAMP, ARTHUR E. HEMING AND MARY F. SAX (intr. by EDWIN J. FELLOWS). *Smith, Kline & French Labs.*

1109. Zinc content of various pituitary fractions. J. J. KOCSIS,* E. J. WALASZEK,* C. E. GRAHAM* AND E. M. K. GEILING. *Univ. of Chicago and Wilson Labs.*

1062. Effect of sodium thioglycolate on certain aspects of carbohydrate metabolism. MARIAN V. FREEMAN,* J. H. DRAIZE AND P. K. SMITH. *Food and Drug Admin. and George Washington Univ. School of Medicine.*

1146. Sensitivity to insulin during adrenocortical response to cold stress in rats. TAG E. MANSOUR AND WILLIAM F. HEWITT, JR. (intr. by ERNEST BUEDING). *Howard Univ. School of Medicine.*

1032. Thyroxine-like and anti-thyroxine activities of substances related to thyroxine. KENNETH I. COLVILLE* (intr. by DESMOND D. BONNYCASTLE). *Yale Univ. School of Medicine.*

1043. P^{32} uptake by the rat liver desoxyribosenucleic acid (DNA) in alloxan diabetic rats. H. F. DIERMEIER* AND A. D. BASS. *State Univ. of New York College of Medicine and Vanderbilt Univ. College of Med.*

1001. Effect of low temperature on the action of drugs. HERBERT A. BRAUN AND L. M. LUSKY.* *Food and Drug Admin.*

1191. Effects of varied doses of cortisone on the survival of rats infected with *D. pneumoniae*. HARRY J. ROBINSON, RICHARD C. MASON* AND AMELIA L. SMITH.* *Merck Inst.*

1176. Factors affecting activity of the enzymes oxidizing carbons 17 and 21 of the pregnene nucleus. JOHN E. PLAGER* AND LEO T. SAMUELS. *Univ. of Utah College of Medicine.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Friday Afternoon, April 10, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Potentiating Agents

FRIDAY, 1:15 P.M.—BLACKSTONE, BALLROOM

Chairman: Louis Goodman

1229. Potentiation of hexobarbital by beta-diethylaminoethyldiphenylpropylacetate hydrochloride (SKF No. 525-A). JOHN J. TONER,* LEONARD COOK* AND EDWIN J. FELLOWS. *Smith, Kline & French Labs.*

1150. Effects of beta-diethylaminoethyldiphenylpropylacetate hydrochloride (SKF No. 525-A) on a series of hypnotics. JOAN M. MAXWELL,* LEONARD COOK,* GERALDINE J. NAVIS,* JOHN J. TONER* AND EDWIN J. FELLOWS. *Smith, Kline & French Labs.*

1034. Potentiation of certain analgesic drugs by beta-diethylaminoethyldiphenylpropylacetate hydrochloride (SKF No. 525-A). LEONARD COOK,* GERALDINE J. NAVIS,* JOHN J. TONER* AND EDWIN J. FELLOWS. *Smith, Kline & French Labs.*

1141. Potentiation of certain spinal cord depressants and central nervous system stimulants by beta-diethylaminoethyldiphenylpropylacetate hydrochloride (SKF No. 525-A). EDWARD MACKO,* LEONARD COOK,* JOHN J. TONER* AND EDWIN J. FELLOWS. *Smith, Kline & French Labs.*

1167. Effect of beta-diethylaminoethyldiphenylpropylacetate hydrochloride (SKF No. 525-A) on the activity of *d*-tubocurarine chloride. GERALDINE J. NAVIS, JOHN J. TONER, LEONARD COOK (intr. by EDWIN J. FELLOWS). *Smith, Kline & French Labs.*

1138. Effect of beta-diethylaminoethyldiphenylpropy lacetate hydrochlorid on the metabolism of 3-(o-toloxy)-1,2-propanediol. ALFRED R. MAASS, PAUL L. CAREY AND ARTHUR E. HEMING (intr. by EDWIN J. FELLOWS). *Smith, Kline & French Labs.*

988. Mechanism of the potentiating action of beta-diethylaminoethyl diphenylpropylacetate HCl (SKF 525-A) on various drugs. JULIUS AXELROD,* JULES REICHENTHAL,* GERTRUDE P. QUINN* AND BERNARD B. BRODIE. *Natl. Insts. of Health.*

1035. Inhibitory action of beta-diethylaminoethyl diphenylpropylacetate HCl (SKF 525-A) on metabolism of barbiturates and alkylamines in liver slices and homogenates. JACK R. COOPER* AND BERNARD B. BRODIE. *Natl. Insts. of Health.*

1052. Pharmacological properties of diethylaminoethyl alpha,alpha-diphenylpropionate HCl (P-19): a potentiating agent. G. M. EVERETT. *Abbott Labs.*

Anticholinesterases: Insecticides

FRIDAY, 1:15 P.M.—BLACKSTONE, HUBBARD ROOM

Chairman: Avram Goldstein

1200. Detoxication rates of anticholinesterase compounds in the rabbit. JACK P. SAUNDERS (intr. by J. H. WILLS). *Chemical Corps Med. Labs.*

1161. Relation of chemical structure to *in vitro* metabolism. RUTH MITCHELL* AND BYRON B. CLARK. *Tufts College Med. School.*

1127. Effect of various drugs in antagonizing the toxicity of TEPP. JOHN R. LEWIS AND W. B. MCKEON, JR.* *Sterling-Winthrop Research Inst.*

1079. Acute toxicity of *o, o*-dimethyl dithiophosphate of diethyl mercaptosuccinate (4049). ERNEST C. HAGAN (intr. by JOHN H. DRAIZE). *Food and Drug Admin.*

1110. Comparative toxicity of two vinyl-substituted alkyl phosphates. J. K. KODAMA,* M. S. MORSE* AND C. H. HINE. *Univ. of California School of Medicine, San Francisco.*

1094. Comparison of toxicities of oxygen and sulfur analogues of certain insecticides containing the *o*- or *p*-nitrophenyl group. R. G. HORTON AND L. W. CONN (intr. by STEPHEN KROP). *Chemical Corps Med. Labs.*

982. Pharmacological observations on chlordane. ANTHONY M. AMBROSE, HERBERT C. CHRISTENSEN* AND DOROTHY J. ROBBINS.* *U. S. Dept. of Agriculture, Albany, Calif.*

1117. Toxicants in the tissues of rats on diets containing dieldrin, aldrin, endrin and isodrin. FRIEDA M. KUNZE* AND EDWIN P. LAUG. *Food and Drug Admin.*

1179. Urinary metabolites from intravenously administered methoxychlor. C. S. PRICKETT* AND EDWIN P. LAUG. *Food and Drug Admin.*

1214. Dilan® toxicity. J. N. SPENCER. *Commercial Solvents Corp.*

1038. Colorimetric method for the estimation of dieldrin. BERNARD DAVIDOW* AND E. P. LAUG. *Food and Drug Admin.*

511. Effects of diethyl *p*-nitrophenyl thiophosphate on goats. CHARLES G. WILBER AND ROGER A. MORRISON.* *Chemical Corps Med. Labs.* (Physiol.)

PAPERS READ BY TITLE

981. Assay of some digitalis products by oral and intravenous cat methods. M. G. ALLMARK AND A. LAVALLEE (intr. by F. C. LU). *Dept. of Natl. Health and Welfare, Ottawa.*

984. Amebacidal activity of bis(diethylthiocarbamyl) disulfide *in vitro*. HAMILTON H. ANDERSON. *Univ. of California School of Medicine, San Francisco.*

987. Pathogenesis of alloxan pulmonary edema investigated by Phosphorus^{32} and Iodine^{131}. DOMINGO M. AVIADO, JR. *Univ. of Pennsylvania.*

989. Factors in electrical method of measuring rate of wound healing. T. C. BARNES. *Hahnemann Med. College and Hosp.*

998. Prevention of apomorphine-induced vomiting by (dimethylamino-1-n-propyl-3)-N-(2-chloro)-phenothiazine hydrochloride. ELDON M. BOYD, W. A. CASSELL* AND CARL E. BOYD.* *Queen's Univ.*

1010. Production and utilization of lactic acid during ether anesthesia. J. P. BUNKER,* W. R. BREWSTER, JR.,* AND H. K. BEECHER. *Harvard Med. School.*

1024. Effect of purine oxidation products upon rate of development. RALPH HOLT CHENEY. *Brooklyn College.*

1037. Erythromycin therapy in acute gonorrhea: untoward intestinal effects. NORMAN A. DAVID, WARREN S. WELBORN* AND DONALD T. SMITH. *Univ. of Oregon Med. School.*

1047. Rebound effects in cat's intestine. N. B. DREYER. *Woman's Med. College of Pennsylvania.*

1049. Influence of sodium dehydrocholate upon Q_{O_2} of tissue slices of starved and fed rats. L. L. EISENBRANDT AND L. S. SCHANKER. *Univ. of Kansas City.*

1064. Rapid photometric estimation of morphine. JAMES M. FUJIMOTO* AND E. LEONG WAY. *Univ. of California School of Medicine and College of Pharmacy, San Francisco.*

1070. Cardio-renal effects of large infusions of Dextran in dogs. C. W. GOWDEY AND I. E. YOUNG.* *Univ. of Western Ontario.*

1080. Blocking action of dibenzylene (S.K.F. 688A). J. P. HAGER* AND B. DE BOER. *Univ. of North Dakota School of Medicine.*

1104. Pharmacologic activity of a series of 4-methyl coumarin derivatives. C. J. KENSLER, R. RENÉ AND ALEXANDER SCRIABINE. *Cornell Univ. Med. College.*

1108. Mechanism of hypoglycemic activity of salts of meso-oxalic acid. YOSHITO KOBAYASHI (intr. by M. H. SEEVERS). *Univ. of Tokyo.*

1111. Nature of antagonism between N-allylnormorphine (Nalline) and morphine. THEODORE KOPPANYI AND ALEXANDER G. KARCZMAR.* *Georgetown Univ. Med. School.*

1115. Codeine pool in stabilized codeine addicts of Oberst. HUGO KRUEGER. *Oregon State College.*

1123. An important fallacy in routine determinations of acute drug toxicity. DAVID LEHR AND MURRAY POZNER.* *New York Med. College.*

1125. Pharmacological effects of toluidine blue and neutral red. JAMES L. LEITCH* AND THOMAS J. HALEY. *Univ. of California, Los Angeles.*

1140. Action of PABA and diethyl-amino-ethanol on blood coagulation. DAVID I. MACHT. *Sinai Hosp., Baltimore.*

1154. Anemia produced by acetylcholine in guinea pigs. IMO K. MEYER* AND JOHN E. DAVIS. *Univ. of Texas, College of Pharmacy.*

1162. Pain relief in acute cholecystitis by intravenous Hydergine®. LUCIEN E. MORRIS. *State Univ. of Iowa Hosps.*

1163. Acute toxicity of 3-methyl-5-heptanone. M. S. MORSE,* J. K. KODAMA,* C. H. HINE AND M. K. DUNLAP.* *Univ. of California School of Medicine, San Francisco.*

1178. Tissue culture methods in experimental pharmacology. C. M. POMERAT* AND C. D. LEAKE. *Univ. of Texas Med. Branch.*

1194. Effects of phenobarbital on oxygen consumption of rat tissues. ROBERT L. RUSSELL* AND B. A. WESTFALL. *Univ. of Missouri School of Medicine.*

1210. Antigen system of acacia. HERBERT SILVETTE AND OSCAR SWINEFORD, JR.* *Univ. of Virginia Med. School.*

1217. Effect of intravenous versus intra-arterial reinfusion of blood. JOSEPH G. STRAWITZ,* O. SIDNEY ORTH, STEVEN E. JORDAN,* WOO CHOO LEE,* ALLAN G. WHEELER* AND ERWIN R. SCHMIDT.* *Univ. of Wisconsin Med. School.*

1218. Cardiovascular effects of hexamethonium in acutely-produced experimental anemia in the dog. F. A. SUNAHARA,* J. E. MERRIAM* AND C. W. GOWDEY. *Univ. of Western Ontario.*

1220. Some aspects of *in vitro* metabolism of human brain cortex slices. V. C. SUTHERLAND AND T. N. BURBRIDGE (intr. by H. W. ELLIOTT). *Univ. of California School of Medicine, San Francisco.*

1222. Variations in eosinophile counts in rat. CELIA WHITE TABOR AND CALVIN T. KLOPP (intr. by PAUL K. SMITH). *George Washington Univ.*

AMERICAN SOCIETY FOR EXPERIMENTAL PATHOLOGY

Thirty-eighth Annual Meeting

Chicago, Illinois, April 6-10, 1953

Tuesday Morning, April 7, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Kidney and Arterial Lesions

TUESDAY, 9:00 A.M.—BLACKSTONE, BALLROOM

Chairman: Paul R. Cannon

1305. Hypertension in bilaterally nephrectomized dogs in the absence of exogenous sodium excess and without ECF expansion. E. E. MUIRHEAD, M. E. FOGELMAN,* F. JONES* AND P. GRAHAM.* *Southwestern Med. College.*

1286. Fat metabolism and role of liver in the hyperlipemia of nephrotoxic renal disease in rats. L. W. MATTHEWS, WALTER HEYMANN, AND DONALD B. HACKEL (intr. by THOMAS D. KINNEY). *Western Reserve Univ. and Cleveland City Hosp.*

1277. Kidney in hyperlipemia of nephrotoxic renal disease in rats. WALTER HEYMANN AND DONALD B. HACKEL (intr. by THOMAS D. KINNEY). *Cleveland City Hosp. and Western Reserve Univ.*

1294. Effect of feeding oxidizing salts and sodium phosphate on production of hemoglobinuric nephrosis. JOSEPH J. LALICH. *Univ. of Wisconsin Med. School.*

1284. Pathologic changes in eight human renal homotransplants. CLINTON V. Z. HAWN, DAVID M. HUME,* JOHN P. MERRILL* AND BENJAMIN F. MILLER.* *Peter Bent Brigham Hosp. and Harvard Med. School.*

1262. Reconstitution of aortic elastic tissue from solution in formic acid. J. P. AYER (intr. by SHIELDS WARREN). *New England Deaconess Hosp.*

1261. Renal and vascular lesions induced in rats by a high salt diet. STEWART H. AUERBACH,* GEORGE R. MENEELY, ROBERT G. TUCKER* AND WILLIAM J. DARBY.* *Thayer VA Hosp. and Vanderbilt Univ. School of Medicine.*

1302. Alterations in ground substance in experimental necrotizing arteritis. HENRY C. MCGILL, JR.* AND RUSSELL L. HOLMAN. *Louisiana State Univ.*

1342. Factors responsible for lipomatous and atheromatous lesions in coronary arteries of the rat. ROBERT W. WISSLER, JAY L. COLLINS,* MARJORIE SCHROEDER* AND KATHRYN SOULES.* *Univ. of Chicago.*

Infectious Agents

TUESDAY, 9:00 A.M.—BLACKSTONE, HUBBARD ROOM

Chairman: D. Murray Angevine

1308. Interstitial reaction in acute poliomyelitis. MAE BRANWELL NETTLESHIP* AND ANDERSON NETTLESHIP. *Univ. of Arkansas School of Medicine.*

1271. A neurophysiological study of virus action. (Pseudorabies virus in sympathetic ganglia). JOHN DEMPSHER AND MARTIN G. LARRABEE (intr. by FREDERIK B. BANG). *Johns Hopkins Univ. and Hosp.*

1291. Granules in lymphocytes (splenocytes) in virus infections. RALPH ISAACS. *Michael Reese Hosp.*

1298. Pathogenesis and pathology of pulmonary infections following the intraperitoneal inoculation of influenza virus A in mice. CLAYTON G. LOOSLI, BYRON S. BERLIN,* DOROTHY HAMRE* AND MERLE H. RITTER.* *Univ. of Chicago.*

1320. Source of hypergammaglobulinemia in pulmonary tuberculosis. FENTON SCHAFFNER,* GEORGE C. TURNER,* DOROTHY ESHBAUGH* AND HANS POPPER. *Oak Forest Tuberculosis Hosp. and Cook County Hosp.*

1315. Protein intake and tuberculosis in hamsters. H. L. RATCLIFFE. *Zoological Society and Univ. of Pennsylvania School of Medicine.*

1288. Influence of hypoxia and polycythemia on susceptibility of rats to experimental bacterial endocarditis. BENJAMIN HIGHMAN AND PAUL D. ALTLAND.* *Natl. Insts. of Health.*

Tuesday Afternoon, April 7, 2:00 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part 1.

Liver and Protein Metabolism

TUESDAY, 2:00 P.M.—BLACKSTONE, BALLROOM

Chairman: F. S. Robscheit-Robbins

1341. Regeneration of liver of the mouse treated with carbon tetrachloride after total body x-irradiation. J. WALTER WILSON AND MARY R. F. DAY.* *Brown Univ.*

1264. Hepatic blood flow following arterial or portal vein occlusion. J. L. BOLLMAN AND J. H. GRINDLAY.* *Mayo Fndn.*

1266. Parenteral use of fat emulsions in relation to amino acid utilization. PAUL R. CANNON, LAURENCE E. FRAZIER* AND RANDOLPH H. HUGHES.* *Univ. of Chicago.*

1270. Half-life of homologous serum albumin in several species. MARIA P. DEICHMILLER,* FRANK J. DIXON AND PAUL H. MAURER.* *Univ. of Pittsburgh School of Medicine.*

1295. Protein turnover and enzyme formation. NORMAN D. LEE* AND ROBERT H. WILLIAMS. *Univ. of Washington Med. School.*

1267. Effect of thioacetamide on the desoxyribonucleic acid content of liver cells. WILLIAM H. CARNES, DANIEL S. BERNSTEIN* AND LELLAND J. RATHER. *Stanford Univ. School of Medicine.*

1339. Cytoplasmic ribonucleic acid in human and animal hepatic parenchyma. W. LANE WILLIAMS. *Univ. of Minnesota.*

1313. Variations of hepatic and pancreatic changes produced by ethionine. HANS POPPER AND J. DE LA HUERGA.* *Cook County Hosp.*

1289. Dietary hepatic necrosis: absence of cirrhosis following recurrent episodes. F. W. HOFFBAUER AND BERNADINE WITTENBURG.* *Univ. of Minnesota Hosps.*

Hematology and Coagulation

TUESDAY, 2:00 P.M.—BLACKSTONE, HUBBARD ROOM

Chairman: Harry P. Smith

1326. A concept of genesis of leukemia. BERNARD STEINBERG. *Toledo Hosp.*

1306. Combined action of amethopterin and an antimalarial drug on mouse leukemia L 1210. E. M. NADEL AND J. GREENBERG (intr. by HAROLD L. STEWART). *Natl. Insts. of Health.*

1269. Myelogram of normal white Pekin ducks. G. CRASS* AND R. H. RIGDON. *Univ. of Texas Med. Branch.*

1292. Cyclic changes in human platelet morphology. A. R. KELLY,* R. M. STURROCK* AND L. B. GORSKI* (intr. by F. W. HARTMAN). *Henry Ford Hosp.*

1310. Life span of naturally labeled platelets of rats. T. T. ODELL, JR.,* F. N. GAMBLE* AND J. FURTH (intr. by JACOB FURTH). *Oak Ridge Natl. Lab.*

1300. Temporary defect of coagulation produced by zymin (dried yeast). FRANK D. MANN AND MARGARET HURN.* *Mayo Clinic.*

1275. Influence of antihemophilic factor (AHF) and serum accelerator on prothrombin utilization in canine blood. JOHN B. GRAHAM, ROBERT D. LANGDELL,* FRANK C. MORRISON, JR.* AND K. M. BRINKHOUS. *Univ. of North Carolina.*

1335. Antiaccelerator (anticonvertin) activity of canine plasma and serum fractions. ROBERT H. WAGNER,* WADE M. BRANNAN, JR.* AND K. M. BRINKHOUS. *Univ. of North Carolina.*

1272. Isolation and purification of intermediates formed prior to the activation of prothrombin. JOSEPH E. FLYNN* AND ROBERT W. COON* (intr. by H. P. SMITH). *Columbia Univ.*

Pathology Society Business Meeting

TUESDAY, 4:00 P.M.—BLACKSTONE, BALLROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONRAD HILTON, GRAND BALLROOM

Program on page 477

Wednesday Morning, April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Radiation Studies

WEDNESDAY, 9:00 A.M.—BLACKSTONE, BALLROOM

Chairman: Sidney C. Madden

1327. Potential therapeutic use of short-lived radioactive isotopes, as chlorine-38, krypton-37. WINTON STEINFIELD (intr. by LEE E. FARR). *Brookhaven Natl. Lab.*

1319. Time as a factor in the enhancive effect of cortisone and roentgen radiation upon experimental moniliasis and blastomycosis. FRANK ROTH, JR.,* JACK FRIEDMAN* AND JEROME T. SYVERTON. *Univ. of Minnesota.*

1278. Thoracic lymphatic drainage of silver coated radioactive gold colloids. P. F. HAHN AND E. L. CAROTHERS.* *Meharry Med. College.*

1338. Effect of spleen shielding, glutathione, and para-aminopropiophenone upon recovery of the small bowel epithelium of the rat following total body x-radiation. R. BLAND WILLIAMS, JR. AND ROBERT P. DELONG (intr. by GEORGE BRECHER). *Naval Med. Research Inst.*

1276. Reversal of Rickettsiostatic action of streptomycin by x-rays. DONALD GREIFF,* MASAHIRO CHIGA* AND HENRY PINKERTON. *St. Louis Univ.*

1314. *In vitro* nucleotide synthesis in rat spleen nuclei and effect of total body x-irradiation. RICHARD L. POTTER AND GEORGE F. GRANNIS (intr. by FRANK H. BETHELL). *Univ. of Michigan.*

1336. Localization of formazan by intact HSl mouse tumor cells. G. Z. WILLIAMS. *Med. College of Virginia.*

1337. Effect of irradiation on *in vivo* tetrazolium reduction by HSl mouse tumor cells. J. T. WILLIAMS* AND G. Z. WILLIAMS. *Med. College of Virginia.*

1279. Differential incorporation of S^{35} methionine by tumor cells and normal tissue. M. L. HAIGLER,* G. Z. WILLIAMS AND J. T. WILLIAMS.* *Med. College of Virginia.*

Techniques and Miscellaneous

WEDNESDAY, 9:00 A.M.—BLACKSTONE, HUBBARD ROOM

Chairman: James F. Rinehart

1259. Studies of the *in vitro* solubility and ion exchange of *in vivo* deposited Ca-45 in bone. JAMES S. ARNOLD (intr. by FRANCIS D. GUNN). *Univ. of Utah College of Medicine.*

689. Radioautographic studies on reticulo-endothelial system. DICRAN GOULIAN, JR. (intr. by WILLARD A. KREHL). *Yale Univ. School of Medicine.* (Biochem.)

1309. Production of 'intercellular bile canaliculi.' ALEX B. NOVIKOFF AND ELSIE F. NOE (intr. by EPHRAIM WOLL). *Univ. of Vermont College of Medicine.*

1331. Daily cholic acid and cholesterol excretion in bile hypo-, hyper-, and euthyroid rats. JAMES C. THOMPSON (intr. by I. S. RAVDIN). *Univ. of Pennsylvania Schools of Medicine.*

1329. Life span of canine erythrocytes modified by influenza virus. W. B. STEWART, C. W. PETENYI* AND H. M. ROSE. *Columbia Univ.*

1303. Respiratory tract absorption of crystalline B_{12} in man demonstrated by urinary bioassay and hematopoietic studies. R. W. MONTO* (intr. by J. W. REBUCK). *Henry Ford Hosp.*

1334. Origin and function of opsonins in experimental brucellosis of guinea pigs. JOSEPH VICTOR AND JEANNE R. VALLIANT.* *Chemical Corps, Biological Labs.*

1316. Quantitation and classification of lymph node cells transferred from rabbits injected with antigens to recipient rabbits. J. W. REBUCK, T. N. HARRIS AND SUSANNA HARRIS.* *Henry Ford Hosp. and Children's Hosp.*

1282. Tissue toxicity of beta-propiolactone and its degradation products. F. W. HARTMAN AND A. R. KELLY.* *Henry Ford Hosp.*

Wednesday Afternoon, April 8, 2:00 p.m.

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For complete institutional connection and address see abstract, Part 1.

Inflammation and Repair

WEDNESDAY, 2:00 P.M.—BLACKSTONE, BALLROOM

Chairman: Russell L. Holman

1333. Changes of dermal connective tissue after total-body irradiation. A. C. UPTON* AND W. D. GUDE* (intr. by JACOB FURTH). *Oak Ridge Natl. Lab.*

1263. Anaphylaxis versus the anaphylactoid reaction produced by testis extract and ovomucoid in rats. EARL P. BENDITT, SAUL BADER* AND MARGARET ARASE.* *La Rabida-Jackson Park Sanitarium and Univ. of Chicago.*

1280. Sequence of histologic alterations in skin of dogs with changes in dietary fat. ARILD E. HANSEN, JOHN G. SINCLAIR* AND HILDA F. WIESE.* *Univ. of Texas Med. Branch.*

1328. Gastric ulcers and other pathological changes in rats given 2-chloroadenosine or adenosine. STEPHEN S. STERNBERG,* DONALD A. CLARKE* AND FREDERICK S. PHILIPS* (intr. by FRED W. STEWART). *Sloan-Kettering Inst.*

1299. Fractionation of embryonic growth-promoting factors for fibroblasts. HELEN MAGANINI,* ALBERT W. SCHWEITZER* AND GEORGE M. HASS. *Presbyterian Hosp., Chicago.*

1285. Effect of cortisone upon healing of experimentally produced myocardial infarction in dogs. NORMAN G. HEPPER,* DAVID E. DONALD,* RAYMOND D. PRUITT* AND JESSE E. EDWARDS. *Mayo Clinic and Fndn.*

1268. Intracranial pressure, blood pressure and papilledema in dogs with closed cerebral lesions produced by liquid nitrogen. RAYMOND A. CLASEN,* DAVID V. L. BROWN,* SEYMOUR LEAVITT* AND GEORGE M. HASS. *Presbyterian Hosp., Chicago.*

1258. Microscopic studies of parabiotic junctions in rabbits with observations on the cross-circulation. RICHARD H. ANDRESEN,* CLARENCE W. MONROE* AND GEORGE M. HASS. *Presbyterian Hosp., Chicago.*

1297. Skeletal roentgenographic, histopathological and autoradiographic findings in humans twenty years after the administration of radium chloride. W. B. LOONEY (intr. by HOWARD T. KARSNER). *Argonne Natl. Lab.*

Hormones, Vitamins and Enzymes

WEDNESDAY, 2:00 P.M.—BLACKSTONE, HUBBARD ROOM

Chairman: Cyrus C. Erickson

1324. Influence of diethylstilbestrol and related substances on respiratory metabolism of yeast. BERNARD SHACTER (intr. by MICHAEL B. SHIMKIN). *Naval Radiological Defense Lab., Natl. Cancer Inst. and Univ. of California School of Medicine, San Francisco.*

1283. Correlation of bioassays of extractable insulin and numbers of beta cell granules in pancreas obtained at autopsy from diabetic and nondiabetic man. W. STANLEY HARTROFT AND GERALD A. WRENSHALL.* *Univ. of Toronto.*

1340. Uterine changes in Bagg albino mice under the influence of alpha estradiolsensitized collodion particles, multiple pregnancies and advancing age. WILLIAM L. WILLIAMS,* KATHERYN PAULLUS* AND CYRUS C. ERICKSON. *Univ. of Tennessee.*

1322. Hypervitaminosis D in the larval frog. HANS G. SCHLUMBERGER. *Ohio State Univ.*

1323. Specific and nonspecific cytocidal effects of adrenal cortical hormones *in vitro*. ROBERT SCHREK. *Hines VA Hosp.*

1311. Increased susceptibility to vitamin A toxicity in rats fed a fat-free diet. THEODORE C. PANOS* AND JOHN C. FINERTY* (intr. by ARILD E. HANSEN). *Univ. of Texas. Med. Branch.*

1293. Cytological distribution in skeletal muscle of enzymes acting on phosphorylated nucleotides. AMARA KITIYAKARA* AND JOHN W. HARMAN. *Univ. of Wisconsin Med. School.*

1281. Metabolic interrelations between mitochondria, sarcosomes and myofibrils of skeletal muscle. JOHN W. HARMAN AND URSULA OSBORNE.* *Univ. of Wisconsin Med. School.*

1260. Chemical studies of ATP-induced contraction of isolated myofibrils *in vitro*. Nitrogen and phosphorus. CHARLES A. ASHLEY,* ALBERTAS ARASIMAVICIUS* AND GEORGE M. HASS. *Presbyterian Hosp., Chicago.*

1290. Effect of somatotropin on embryonal bone growth. KUANG-MEI HSIEH,* TUNG-YUE WANG* AND HERMAN T. BLUMENTHAL. *Jewish Hosp. of St. Louis and St. Louis Univ.*

Pathology Society Dinner

WEDNESDAY, 7:00 P.M.—BLACKSTONE, BALLROOM

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Tumors

THURSDAY, 9:00 A.M.—BLACKSTONE, BALLROOM

Chairman: Harold L. Stewart

401. Acceleration of development of methyl cholanthrene induced tumors by nerve section. ARTHUR SAMUELS* (intr. by J. E. P. TOMAN). *Univ. of Chicago.* (Physiol.)

1332. Inhibition of chicken tumor I by plasma from chicken infected with the malaria parasite *Plasmodium lophurae*. W. TRAGER AND R. B. MCGHEE.* *Rockefeller Inst.*

1296. Serological activities of serum fractions in animal neoplasia. S. W. LIPPINCOTT, C. T. O. FONG,* H. THORNTON* AND L. D. ELLERBROOK.* *Univ. of Washington School of Medicine and Natl. Insts. of Health.*

1317. Fibromata arising from feather follicles of ducks treated with methylcholanthrene. R. H. RIGDON. *Univ. of Texas Med. Branch.*

1307. Production of fibrosarcomas in rats at site of subcutaneous injection of various food dyes. ARTHUR A. NELSON AND E. CONWAY HAGAN.* *Food and Drug Admin.*

1318. Host factors and initiation of pulmonary adenomas in mice with urethane. STANFIELD ROGERS. *Duke Univ. School of Medicine.*

1274. Effect of heat, pH changes and oxidation on free tumor cells in the peritoneal exudate of the mouse. HORACE GOLDIE,* WARREN H. STALEY,* HERBERT RYAN* AND PAUL F. HAHN. *Meharry Med. College.*

1301. Distribution and pathology following intracerebral and intraventricular radio gold. C. C. MCCLURE, JR.,* E. L. CAROTHERS* AND P. F. HAHN. *Meharry Med. College.*

1273. Quantitative relationship between growth of pituitary tumors secreting TSH and thyroid function. TSH bioassay in mice. J. FURTH, W. T. BURNETT JR.* AND E. L. GADSDEN.* *Oak Ridge Natl. Lab.*

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Program on page 477

PAPERS READ BY TITLES

1287. Effect of cortisone on high incidence of experimental bacterial endocarditis in altitude rats and on response to penicillin therapy. BENJAMIN HIGHMAN AND PAUL D. ALTLAND.* *Natl. Insts. of Health.*

1321. Host cell-virus relationships studied *in vitro* with a pure strain of mammalian cell (L strain, Earle). WILLIAM F. SCHERER (intr. by JEROME T. SYVERTON). *Univ. of Minnesota.*

1325. Eye lesions in 'yellow' mice. MARTIN SILBERBERG AND RUTH SILBERBERG. *Washington Univ.*

1330. Radiosensitivity of free sarcoma 37 cells grown in the peritoneal exudate of the mouse *in vivo*. GADSON J. TARLETON, HORACE GOLDIE, ARNOLD M. JONES AND GEORGE A. MOORE (intr. by P. F. HAHN). *Meharry Med. College.*

AMERICAN INSTITUTE OF NUTRITION

Seventeenth Annual Meeting

Chicago, Illinois, April 6–10, 1953

Tuesday Morning, April 7, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Vitamin B-Complex

TUESDAY, 9:00 A.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: Paul L. Day

1555. Development of a synthetic diet for young guinea pigs and its use in the production of specific B-vitamin deficiencies. MARY ELIZABETH REID. *Natl. Insts. of Health.*

1400. Competitive interference with thiamine storage in the rat. HELEN T. PARSONS, FUNG HAAN FUNG,* FRANCES WHITE* AND EVA JENSEN QUINN.* *Univ. of Wisconsin.*

1418. Riboflavin metabolism of women on controlled diets. CLARA A. STORVICK, MEI-LING WU* AND EVELYN WARREN.* *Oregon State College.*

1363. Niacin requirement on 'corn' and 'wheat' diets low in tryptophan. GRACE A. GOLDSMITH, HAROLD L. ROSENTHAL* AND WALTER G. UNGLAUB.* *Tulane Univ. School of Med.*

1553. Niacin-like activity of 3-acetylpyridine in dogs. E. G. MCDANIEL (intr. by W. H. SEBRELL, JR.). *Natl. Insts. of Health.*

1412. *In vitro* synthesis of quinolinic acid in some rat tissues. S. A. SINGAL,* V. P. SYDENSTRICKER AND JULIA M. LITTLEJOHN.* *Med. College of Georgia.*

1354. Desoxypyridoxine antagonism of transaminase: augmentation by testosterone. L. S. DIETRICH (intr. by MAURICE E. SHILS). *Columbia Univ. College of P. & S.*

957. Vitamin B_6 and the utilization of some keto and hydroxy acids for growth by the rat. J. WHITE, R. S. STANDER,* A. DAYTON* AND P. DAVID.* *Natl. Insts. of Health.* (Biochem.)

1359. Effect of ascorbic acid on rats deprived of pantothenic acid during pregnancy. GLADYS EVERSON, LOIS NORTHROP,* NAM YOUNG CHUNG* AND ROBERT GETTY.* *Iowa Exper. Station and Iowa State College.*

1372. Prevention of pantothenic acid deficiency with glucuronolactone and other compounds related to ascorbic acid. JAMES M. HUNDLEY AND ROBERT B. ING.* *Natl. Insts. of Health.*

1362. The function of carnitine (B_T). S. FRIEDMAN,* P. K. BHATTACHARYYA* AND G. FRAENKEL. *Univ. of Illinois.*

Tuesday Afternoon, April 7, 1:15 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Folic Acid and Vitamin B_{12}

TUESDAY, 1:15 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: William J. Darby

1343. Endogenous bacterial infections in folic acid depleted rats. CONRADO F. ASENJO AND A. POMALES-LEBRON.* *Univ. of Puerto Rico School of Medicine.*

1356. Enzymatic release and synthesis of citrovorum factor (CF) by avian liver homogenate. V. M. DOCTOR,* CHARLESTA BROWN* AND J. R. COUCH. *Texas A and M College.*

1429. Folic acid deficiency in the guinea pig. C. W. WOODRUFF, S. L. CLARK, JR., AND E. B. BRIDGFORTH (intr. by W. J. DARBY). *Vanderbilt Univ. School of Medicine.*

1424. Effect of aminopterin on the metabolism and morphology of duodenal mucosa. J. J. VITALE,* N. ZAMCHECK,* D. M. HEGSTED AND J. DIGIORGIO.* *Boston City Hosp.*

1352. Relationship of histidine to the excretion of a glutamic acid derivative in folic acid-deficient rats. FLOYD S. DAFT, MILTON SILVERMAN,* HERBERT TABOR,* ALAN H. MEHLER* AND HUGO BAUER.* *Natl. Insts. of Health.*

576. Vitamin B_{12} and cobalt in cattle nutrition. ORVILLE G. BENTLEY,* T. V. HERSHBERGER* AND A. L. MOXON. *Ohio Agriculture Exper. Station.* (Biochemistry).

1409. Absorption of vitamin B_{12} in dogs. HAROLD L. ROSENTHAL AND JOHN K. HAMPTON JR. (intr. by GRACE A. GOLDSMITH). *Tulane Univ. School of Medicine.*

1422. Vitamin B_{12} in blood and urine after oral and parenteral administration. WALTER G. UNGLAUB,* HAROLD L. ROSENTHAL* AND GRACE A. GOLDSMITH. *Tulane Univ. School of Medicine.*

1353. Effect of injecting and feeding vitamin B_{12} to hens on the content of the vitamin in the egg, chick and blood. C. A. DENTON,* W. L. KELLOGG,* R. J. LILLIE,* J. R. SIZEMORE* AND H. R. BIRD. *USDA, Beltsville.*

1374. Retention of Co^{60}-labeled vitamin B_{12} in chickens. J. T. JACKSON,* L. J. MACHLIN,* E. A. BRADENBURGER,* C. A. DENTON* AND H. R. BIRD. *USDA, Beltsville.*

1358. Interrelationships between vitamin B_{12} and methionine in metabolism. CECILE HOOVER EDWARDS AND RUTH T. CARTER (intr. by PEARL P. SWANSON). *Tuskegee Inst.*

1383. Diabetic retinopathy and urinary excretion of vitamin B_{12}. CALVIN A. LANG,* BERNARD BECKER,* DIRK GLEYSTEEN* AND BACON F. CHOW. *Johns Hopkins Univ.*

Nutrition Society Business Meeting

TUESDAY, 4:15 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONRAD HILTON, GRAND BALLROOM

Program on page 477

Wednesday Morning, April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address, see abstract, Part I.

Unclassified Growth Factors

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: Floyd S. Daft

1392. Unidentified growth factors for chicks. J. MCGINNIS, W. K. WARDEN,* W. M. REYNOLDS,* H. G. LUTHER, R. C. KERSEY* AND R. J. FEENEY. *Charles Pfizer & Co.*

1426. Chick growth factor present in fish meal and fish solubles. A. C. WIESE, C. F. PETERSON,* A. R. PAPPENHAGEN* AND H. D. WYCOFF.* *Univ. of Idaho.*

1420. Growth effect of mucin on rats fed simulated human milk. R. M. TOMARELLI, E. LINDEN* AND F. W. BERNHART.* *Wyeth Incorp.*

1399. Studies on the antithyrotoxic factor. L. R. OVERBY,* R. L. FREDRICKSON* AND D. V. FROST. *Abbott Labs.*

1376. Existence of a survival factor present in natural fats. KENNETH W. KEANE* AND B. CONNOR JOHNSON. *Univ. of Illinois.*

1556. Dietary necrotic liver degeneration: occurrence of factor 3 in different yeasts. KLAUS SCHWARZ (intr. by FLOYD S. DAFT). *Natl. Insts. of Health.*

850. Distribution of the xanthine oxidase factor in foods. DAN A. RICHERT AND W. W. WESTERFELD. *State Univ. of New York Med. College at Syracuse.* (Biochem.)

1417. Role of protogen in animal nutrition. E. L. R. STOKSTAD, H. P. BROQUIST* AND E. L. PATTERSON.* *Lederle Labs.*

Inorganic Elements

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, PRIVATE DINING ROOM 2

Chairman: L. A. Maynard

1389. Deficiencies of differentially phosphate fertilized soybean forages as measured by rabbit responses. G. MATRONE,* W. W. G. SMART, JR.,* F. W. SHERWOOD* AND G. H. WISE. *North Carolina Agric. Exper. Station and U. S. Plant, Soil and Nutrition Lab., Ithaca.*

1381. Metabolism of sodium sulfate labeled with radioactive sulfur in sheep. R. KULWICH,* P. B. PEARSON AND A. H. LANKENAU.* *USDA, Beltsville.*

1393. Effect of administration of potassium iodate, potassium iodide and placebo tablets on endemic goiter and protein bound iodine levels in school children. JOSE MÉNDEZ,* ADELA GABEZAS,* FABIO CASTILLO* AND NEVIN S. SCRIMSHAW. *Inst. of Nutrition of Central America and Panama.*

1360. Comparative metabolic effects of thyroxine and triiodothyronine *in vitro*. GLADYS FELDOTT (intr. by MAY S. REYNOLDS). *Univ. of Wisconsin.*

1395. Effect of dietary sodium restriction upon growth and electrolyte content of transplanted sarcoma 180 in mice. J. DEAN MINFORD* AND ROBERT E. OLSON. *Grad. School of Public Health, Univ. of Pittsburgh.*

1350. Na, K and Cl of certain tissues of the rat after a low choline diet and during early dietary rehabilitation. R. CLAYTON* AND E. DA COSTA. *Army Med. Nutrition Lab., Chicago.*

783. Potassium losses in surgical patients maintained on potassium deficient diets. STANLEY LEVEY, LOUIS I. BABB,* HARVEY KRIEGER* AND WILLIAM E. ABBOTT.* *Western Reserve Univ. and Hosp.* (Biochem.).

1366. Chronic manganese and copper poisoning in rats and its possible relation to hepatolenticular degeneration in man. C. J. GUBLER, G. E. CARTWRIGHT, D. S. TAYLOR,* E. J. EICHWALD* AND M. M. WINTROBE. *Univ. of Utah College of Medicine.*

1552. Effect of phytates on Ca^{45} absorption in children on low calcium breakfasts. FELIX BRONNER* AND ROBERT S. HARRIS. *Massachusetts Inst. of Technology.*

Wednesday Afternoon, April 8, 1:15 p.m.

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For complete institutional connection and address see abstract, Part I.

Symposium: Metabolic Significance of B-Vitamins

WEDNESDAY, 1:15 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: Esmond E. Snell

Introductory. Summary of metabolic functions of niacin, riboflavin and vitamin B_6. ESMOND E. SNELL. *Dept. of Chemistry, Univ. of Texas, Austin.*

Metabolic functions of pantothenic acid. G. DAVID NOVELLI. *Massachusetts Gen. Hosp. and Harvard Med. School, Boston.*

Metabolic functions of thiamin and lipoic acid. LESTER J. REED, *Dept. of Chemistry, Univ. of Texas, Austin.*

Metabolic functions of biotin. HENRY A. LARDY. *Dept. of Biochemistry, Univ. of Wisconsin, Madison.*

American Institute of Nutrition Dinner

Presentation of Awards

WEDNESDAY, 6:30 P.M.—CONRAD HILTON, SOUTH BALLROOM

Biochemistry-Nutrition Smoker

WEDNESDAY, 9:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Tickets available at the ticket desk, Conrad Hilton Hotel.

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Proteins

THURSDAY, 9:00 A.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: Walter C. Russell

1405. Effect of level of protein fed baby pigs. ELWOOD F. REBER,* C. K. WHITEHAIR AND R. W. MACVICAR. *Oklahoma Agric. Exper. Station.*

1379. Factors influencing the growth of chicks fed rations containing rapeseed meal. F. H. KRATZER. *Univ. of California.*

1386. Evaluation of protein quality in cottonseed meals by chick growth and by a chemical index. CARL M. LYMAN, WAN YUIN CHANG* AND J. R. COUCH. *Texas Agric. Exper. Station.*

1377. Experimental variables in predicting protein minima for rats. A. L. KELLEY* AND M. A. OHLSON. *Michigan State College.*

1347. Influence of standardizing diet on nitrogen metabolism during caloric restriction. DORIS HOWES CALLOWAY* AND HARRY SPECTOR. *QM Food and Container Inst.*

1415. Nitrogen metabolism at various levels of nitrogen intake during caloric restriction. HARRY SPECTOR AND DORIS HOWES CALLOWAY.* *QM Food and Container Inst.*

1397. Maintenance of pregnancy on protein-free regimen with estrone and progesterone. MARJORIE M. NELSON AND HERBERT M. EVANS.* *Univ. of California, Berkeley.*

1349. Effect of dehydrating and defatting on the nutritive value of beef proteins. HELEN E. CLARK AND ADA M. SEYMOUR (intr. by PEARL P. SWANSON). *Kansas State College.*

1373. Synthesis of peptides and their role in the Maillard reaction. MICHAEL IACOBELLIS AND LAWRENCE J. SCHROEDER (intr. by ARTHUR H. SMITH). *Wayne Univ. College of Medicine.*

1371. Effect of dietary protein level and tocopherol on the unsaturated fatty acid contents of rat tissues. E. L. HOVE AND ZELDA HOVE.* *Alabama Polytechnic Inst.*

1421. Effect of protein source upon the percentage of unsaturated fatty acids in the carcass of the rat. S. B. TOVE, F. H. SMITH, C. T. YOUNG AND F. W. SHERWOOD (intr. by G. H. WISE). *North Carolina Agric. Exper. Station.*

General; Growth; Antibiotics

THURSDAY, 9:00 A.M.—CONRAD HILTON, PRIVATE DINING ROOM 2

Chairman: Albert G. Hogan

1410. Improved mouse salmonellosis model for nutritional studies in natural resistance to infection. HOWARD A. SCHNEIDER AND NORTON D. ZINDER.* *Rockefeller Inst.*

1357. Effects of atabrine upon leucocyte production. CARL D. DOUGLASS,* PAUL L. DAY, I. MESCHAN* AND BARBARA KELLEY.* *Univ. of Arkansas School of Medicine.*

1348. Fat protection in x-radiation injury. AMBER L. S. CHENG* AND HARRY J. DEUEL, JR. *Univ. of Southern California, Los Angeles.*

1385. Prolonged percutaneous administration of sex hormones on growing female rats. A. E. LIGHT AND J. A. TORNABEN (intr. by E. F. BEACH). *Wellcome Research Labs.*

1404. Change in specific gravity of albino rats during pregnancy as an indication of the composition of weight gain. RUTH L. PIKE AND WALTER N. BROWN, JR. (intr. by MARY L. DODDS). *Pennsylvania State College.*

1351. Change in total fat and water content of carcass, kidney, heart and liver of male albino rat after dietary restriction and rehabilitation. E. DACOSTA AND R. CLAYTON.* *Army Med. Nutrition Lab.*

1406. Effect of ration, terramycin content, method of feeding on growth of baby pigs. W. M. REYNOLDS,* G. P. PENDERGRASS,* P. P. APPEL,* H. G. LUTHER* AND J. MCGINNIS. *Charles Pfizer & Co.*

960. Comparison of the chick and microbiological methods for assay of penicillin in feeds. WILLIAM L. WILLIAMS,* R. G. ESPOSITO* AND E. L. R. STOKSTAD. *Lederle Labs., Pearl River, New York.* (Biochem.)

1428. Effects of feeding terramycin and penicillin to laying hens on antibiotic deposition in eggs and growth of murine typhus rickettsiae in embryonated eggs. S. C. WONG,* R. C. KERSEY,* J. R. MCMAHAN,* W. M REYNOLDS,* W. K. WARDEN* AND J. MCGINNIS. *Charles Pfizer & Co.*

1346. Growth depressing effect of aureomycin in

folic acid-deficient chicks. GEORGE M. BRIGGS, MATTIE RAE SPIVEY* AND LIGIA ORTIZ.* *Natl. Insts. of Health.*

1375. Effects of parenteral and oral administration of antibiotics to rats fed a vitamin B_{12}-deficient diet. K. R. JOHANSSON, G. E. PETERSON AND E. C. DICK (intr. by M. O. SCHULTZE). *Univ. of Minnesota.*

Thursday Afternoon, April 9, 1:15 p.m.

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Proteins and Amino Acids

THURSDAY, 1:15 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: W. H. Griffith

1365. Effect of diet on wound healing in rat muscle. JAMES W. GREEN,* GEORGE R. HEARN* AND JAMES B. ALLISON. *Rutgers Univ.*

1367. Influence of proteins and carbohydrates on liver fat deposition in rats. A. E. HARPER,* W. J. MONSON,* D. A. BENTON* AND C. A. ELVEHJEM. *Univ. of Wisconsin.*

1370. Liver dysfunction in man and rats on experimental diets inadequate in protein. M. K. HORWITT, W. S. ROTHWELL* AND R. M. KARK.* *Elgin State Hosp. and Univ. of Illinois College of Medicine.*

1398. Effect of protein and cholesterol in the diet on metabolism of injected methyl C^{14} choline. RUTH OKEY AND ESTHER GOOSSEN.* *Univ. of California, Berkeley.*

1425. Methionine, choline, B_{12} and homocystine in the nutrition of the mature fowl. B. E. WELCH* AND J. R. COUCH. *Texas A & M College.*

1387. Uptake of S^{35}-labeled methionine by the feathers and some tissues of the growing chicken. L. J. MACHLIN,* J. T. JACKSON* AND P. B. PEARSON. *USDA, Beltsville.*

1407. Influence of dietary amino acids on the free amino acids in blood plasma. LUTHER R. RICHARDSON, LYNN G. BLAYLOCK* AND CARL M. LYMAN. *Texas A & M College.*

1423. Comparative blood levels of arginine, guanidoacetic acid, guanidine, and methylguanidine in normal individuals and in poliomyelitis patients. J. VAN PILSUM, E. KITO, J. HESS AND K. EIK-NES (intr. by LEO T. SAMUELS). *Univ. of Utah College of Medicine.*

1413. Excretion of threonine and valine by young women on a semipurified diet. M. L. SKELLENGER, M. CHALOUPKA AND N. SPOMER (intr. by R. M. LEVERTON). *Nebraska Agric. Exper. Station and USDA.*

1384. Amino acid requirement of young women. II. Valine. R. M. LEVERTON, M. R. GRAM,* E. BRODOVSKY,* A. MITCHELL,* M. CHALOUPKA* AND N. SPOMER.* *Nebraska Agric. Exper. Station and USDA.*

1414. Threonine requirement of the normal infant. SELMA E. SNYDERMAN,* EDWARD L. PRATT,* ARILD E. HANSEN, THEODORE C. PANOS,* EILEEN HASSELMEYER,* MUNG W. CHEUNG* AND L. EMMETT HOLT, JR. *New York Univ. College of Med. and Univ. of Texas.*

Nutrition Society Business Meeting

THURSDAY, 4:00 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Program on page 477

Friday Morning, April 10, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Carbohydrates; Lipids; Human Nutrition

FRIDAY, 9:00 A.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: N. B. Guerrant

1361. Influence of dietary fat and carbohydrate on longevity. C. E. FRENCH, R. H. INGRAM,* G. P. BARRON,* J. A. URAM* AND R. W. SWIFT. *Pennsylvania State Coll.*

1368. Rate of alcohol metabolism in fed and fasted animals. D. M. HEGSTED, J. J. VITALE* AND JOHN DI GIORGIO.* *Harvard School of Public Health.*

540. Utilization of various sugars by man, ANTHONY A. ALBANESE, REGINALD A. HIGGONS,* AURORA BELMONT,* ROSEMARIE DILALLO* AND LOUISE ORTO.* *St. Luke's Hosp., New York City.* (Biochem.)

1411. Influence of form of carbohydrate on diabetic effects of alloxan. CECILIA SCHUCK AND HELEN B. LEONARD.* *Purdue Univ.*

1390. Possible role of pancreatic alpha cells in the hereditary obese-hyperglycemic syndrome of mice. J. MAYER, DEMETRIA N. SILIDES* AND MARGARET W. BATES.* *Harvard School of Public Health.*

1401. Effects of feeding cholesterol esters on plasma and liver cholesterol in the chick. D. W. PETERSON, E. A. SHNEOUR AND N. F. PEEK (intr. by C. R. GRAU). *Univ. of California, Berkeley.*

1394. Effect of heparin on the removal of intravenously administered fat emulsion. H. C. MENG* and JOHN B. YOUMANS. *Vanderbilt Univ. School of Medicine.*

1427. Clinical evaluation of nutritional status of children in relation to unsaturated fatty acids in blood serum. HILDA F. WIESE, ARILD E. HANSEN AND REAGAN H. GIBBS.* *Univ. of Texas Med. Branch.*

1402. Values from tripling the milk used in an institution. L. BRADLEY PETT. *Dept. of Natl. Health and Welfare, Ottawa.*

1380. Source, disposition and consumption of nutrients in two army messes by men undergoing basic military training. W. JAMES KUHL, JR., WILLIAM R. BEST, C. FRANK CONSOLAZIO (intr. by THEODORE E. FRIEDEMANN). *Army Med. Nutrition Lab.*

Friday Afternoon, April 10, 1:15 p.m.

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For complete institutional connection and address see abstract, Part I.

Vitamins A, C and E

FRIDAY, 1:15 P.M.—CONRAD HILTON, NORMANDIE LOUNGE

Chairman: Harry G. Day

1369. Absorption, deposition and depletion of vitamin A in the rat. EDWARD G. HIGH (intr. by HARRY G. DAY). *Prairie View A & M College.*

1344. Efficient utilization of intravenous carotene by the rat. J. G. BIERI AND CLIFFORD J. POLLARD (intr. by ARILD E. HANSEN). *Univ. of Texas Med. Branch.*

1396. Utilization of carotene by hypothyroid rats and dogs. AGNES FAY MORGAN AND LOTTE ARNRICH.* *Univ. of California, Berkeley.*

617. Depletion of vitamin A in rat liver as a result of cortisone treatment. I. CLARK AND R. W. COLBURN (intr. by R. H. SILBER). *Merck Inst.* (Biochem.)

916. Highly specific procedure for ascorbic acid. M. X. SULLIVAN AND H. C. N. CLARK.* *Georgetown Univ.* (Biochem.)

1416. Content of ascorbic acid in the white cells of human subjects receiving controlled low intakes of the vitamin. BETTY F. STEELE,* RACHEL LINER,* ZADA H. PIERCE* AND H. H. WILLIAMS. *Cornell Univ.*

818. Changes in tissue levels of ascorbic, dehydroascorbic and diketogulonic acids in the rat exposed to cold. MARY MILLS MONIER, SEYMOUR BYER AND ROSLYN J. WEISS (intr. by JOSEPH H.

ROE). *George Washington Univ. School of Medicine.* (Biochem.)

1382. Increased urinary oxalate excretion by man following massive ascorbic acid ingestion. MERTON P. LAMDEN AND GLORIA A. CHRYSTOWSKI (intr. by HAROLD B. PIERCE). *Univ. of Vermont College of Medicine.*

1355. Effects of vitamin E on amino acid metabolism. JAMES S. DINNING (intr. by ROBERT E. OLSON). *Grad. School of Public Health, Univ. of Pittsburgh.*

1364. Effect of alpha-tocopherol on the hemolysis of erythrocytes in hydrogen peroxide. H. H. GORDON, R. H. DAVIS* AND K. MORGANSTEIN.* *Sinai Hosp., Harriet Lane Home and Johns Hopkins Univ.*

PAPERS READ BY TITLE

1554. Effect of phytates on Ca^{45} absorption in children on breakfasts of moderate calcium content. CONSTANTINE J. MALETZKOS,* FELIX BRONNER* AND ROBERT S. HARRIS. *Massachusetts Inst. of Technology.*

1378. Net protein utilization of rice proteins. MARINUS C. KIK. *Univ. of Arkansas.*

1388. Vitamin E content of tissues in progressive muscular dystrophy. KARL E. MASON, MEI YU DJU* AND SAMUEL J. CHAPIN.* *Univ. of Rochester School of Medicine.*

1391. Influence of copper in high iron diets causing blood dyscrasias in rats. E. G. MCDANIEL* AND FLOYD S. DAFT. *Natl. Insts. of Health.*

1403. Use of blood constituent levels in studying nutritive status of children. H. B. PIERCE, R. F. KRAUSE,* SUSAN B. MERROW,* J. H. BROWE,* C. A. NEWHALL* AND ANN B. DURBROW.* *Univ. of Vermont, College of Medicine.*

1419. Improvement in efficiency of proteins in milled wheat flour with lysine, valine, threonine and an extract of condensed fish solubles. BARNETT SURE. *Univ. of Arkansas.*

Visit the Exhibits!

CONRAD HILTON HOTEL, EXHIBIT HALL

Monday, April 6, 12:00 noon to 8:00 p.m.

Tuesday, Wednesday and Thursday, April 7–9, 8:00 a.m. to 5:30 p.m.

Lost and Found Articles

Inquire at the Federation Office, Conrad Hilton Hotel.

THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Thirty-seventh Annual Meeting

Chicago, Illinois, April 6-10, 1953

Tuesday Morning, April 7, 9:00 a.m.

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For complete institutional connection and address see abstract, Part I.

Sensitivity

TUESDAY, 9:00 A.M.—CONRAD HILTON, UPPER TOWER ROOM

1482. Immunochemical study of allergens of *Alternaria sp.* LEON J. LE BEAU AND MILAN NOVAK (intr. by H. C. BATSON). *Univ. of Illinois College of Medicine.*

1526. Production of allergic encephalomyelitis with purified white matter fractions. BYRON H. WAKSMAN, HUNTINGTON PORTER,* RAYMOND D. ADAMS* AND JORDI FOLCH.* *Harvard Med. School and Massachusetts Gen. and McLean Hosps.*

1489. Anaphylaxis in the pertussis-vaccinated white mouse. SAUL MALKIEL AND BETTY J. HARGIS.* *Northwestern Univ. Med. School.*

1497. Peculiar histamine response in *Hemophilus pertussis* vaccinated mice treated with various substances. J. MUNOZ, L. F. SCHUCHARDT* AND W. F. VERWEY.* *Sharp & Dohme.*

1530. Suppression of dermal sensitivity in experimental brucellosis by ACTH and cortisone. HENRY E. WEIMER AND RUTH A. BOAK (intr. by A. F. RASMUSSEN, JR.). *School of Medicine, Univ. of California, Los Angeles.*

1434. Combination of some 2,4-dinitrophenyl haptens with cystine sulfur of epidermis and keratin. SIDNEY BELMAN* AND HERMAN N. EISEN. *New York Univ. Post-Grad. Med. School.*

1451. Precipitin reaction of the 2,4-dinitrophenyl hapten combined with free NH_2 groups of protein. HERMAN N. EISEN, MARY E. CARSTEN* AND SIDNEY BELMAN.* *New York Univ. Post-Grad. Med. School.*

1525. Antibodies responsible for passive sensitization of human skin with rabbit antiovalbumin sera. JOHN H. VAUGHAN* AND ELVIN A. KABAT. *Columbia Univ. College of P. & S. and Neurological Inst.*

1480. Immunochemical properties of serum fractions of human nonprecipitating diphtheria antitoxin. WILLIAM J. KUHNS (intr. by MACLYN MCCARTY). *Rockefeller Inst.*

Presidential address. JOHN F. ENDERS. *Children's Hosp., Boston.*

Tuesday Afternoon, April 7, 1:45 p.m.

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For complete institutional connection and address see abstract, Part I.

Antibody Formation

TUESDAY, 1:45 P.M.—CONRAD HILTON, UPPER TOWER ROOM

1486. Effect of a booster dose of tetanus toxoid after five or more years. JOSEPH M. LOONEY,* GEOFFREY EDSALL AND WILLIAM H. CHASEN.* *VA Regional Office, and Boston Univ. School of Medicine.*

1457. Aspermatogenesis in guinea pig after injection of homologous testicular material or spermia with adjuvants. JULES FREUND, MURRAY LIPTON* AND GEORGE E. THOMPSON.* *Public Health Research Inst. of the City of New York.*

1532. Cellular morphology of antibody production: the alum granuloma. ROBERT G. WHITE,* ALBERT H. COONS AND JEANNE M. CONNOLLY.* *Harvard Med. School.*

1444. Immunohistochemical studies of the antibody response in the rabbit. ALBERT H. COONS, ELIZABETH H. LEDUC* AND JEANNE M. CONNOLLY.* *Harvard Med. School.*

1453. Suppression by cortisone of granuloma formation and antibody in guinea pigs receiving egg albumin with Freund adjuvants. EDWARD E. FISCHEL, ELVIN A. KABAT, HERBETT C. STOERK,* MARVIN SKOLNICK* AND ADA E. BEZER.* *Columbia Univ., Presbyterian Hosp., Neurological Inst., and the Merck Inst.*

1441. Avidity of diphtheria antitoxin produced by transfer of cells from immunized rabbits. MERRILL W. CHASE, *Rockefeller Inst.*

1488. Nucleic acid changes in spleen during precipitin production in chickens. T. MAKINODAN,* R. RUTH* AND H. R. WOLFE. *Univ. of Wisconsin.*

1494. Liver mitochondia and serum antibody. L. R. MELCHER AND R. REED.* *Natl. Insts. of Health and Univ. of California School of Medicine, San Francisco.*

1450. Effects of repeated massive doses of heterologous plasma proteins in rabbits. FRANK J. DIXON AND PAUL H. MAURER.* *Univ. of Pittsburgh School of Medicine.*

Immunology Society Business Meeting

TUESDAY, 4:15 P.M.—CONRAD HILTON, UPPER TOWER ROOM

Joint Session of the Federation

TUESDAY, 8:30 P.M.—CONRAD HILTON, GRAND BALLROOM

Program on page 477

Wednesday Morning April 8, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

Antigens and Antibodies

WEDNESDAY, 9:00 A.M.—CONRAD HILTON, UPPER TOWER ROOM

1439. Relation between nonspecific bactericidal activity of 'acute phase' human sera and their antiproteolytic power. KENNETH L. BURDON AND CARRIE C. MCROBERTS.* *Baylor Univ. College of Medicine and VA Hosp.*

1510. Relationship of time of immunization and time of x-irradiation to formation of protective antibodies against tetanus toxin. MYRON S. SILVERMAN AND PAUL H. CHIN (intr. by A. P. KREUGER). *Naval Radiological Defense Lab.*

1490. Effect of whole body irradiation on bactericidal and hemolytic capacities of rabbit serum. STANLEY MARCUS AND DAVID M. DONALDSON.* *Univ. of Utah College of Medicine.*

1522. Effect of antigen dosage on x-ray injury to antibody formation. W. H. TALIAFERRO AND L. G. TALIAFERRO. *Univ. of Chicago.*

1533. Quantitative studies in isohemagglutination. M. H. WILKIE* AND E. L. BECKER. *Army Med. Service Grad. School.*

1500. Distribution of antigens in the rabbit organism. H. H. RELLER,* C. F. CRAMPTON* AND F. HAUROWITZ. *Indiana Univ.*

1458. Relation of circulating antibody concentration to localization of labeled (S^{35}) antigen. JUSTINE S. GARVEY* AND DAN H. CAMPBELL. *California Inst. of Technology.*

1470. Precipitation and inhibition of bacterial amino acid decarboxylases by rabbit antibody. ARTHUR F. HOWE* AND HENRY P. TREFFERS. *Yale Univ.*

1505. Phosphatase-antiphosphatase reaction. Competition between substrate and antiphosphatase for phosphatase. M. G. SEVAG, MELVA J. DERRICK* AND RUTH E. MILLER.* *Univ. of Pennsylvania and Woman's Med. College.*

1475. Preparation and specific interactions of purified antihapten antibody. FRED KARUSH. *Children's Hosp. and the Univ. of Pennsylvania School of Medicine.*

1517. Estimation of insulin and antibodies to insulin *in vitro* by hemagglutination and hemolysis of insulin-treated red cells and inhibition of these reactions. A. B. STAVITSKY AND E. R. ARQUILLA.* *Western Reserve Univ. School of Medicine.*

1493. The action of PVP upon certain incomplete antibodies. CRICHTON MCNEIL. *Holy Cross Hosp., Salt Lake City.*

Wednesday Afternoon, April 8, 2:00 p.m.

*An asterisk * following an author's name indicates "by invitation."*
For complete institutional connection and address see abstract, Part I.

General

WEDNESDAY, 2:00 P.M.—CONRAD HILTON, UPPER TOWER ROOM

1459. Some effects of 2-acetylaminofluorene on growth of *clostridia multifermentans*. JOHN J. GAVIN AND ARTHUR W. WASE (intr. by AMEDEO BONDI, JR.). *Smith, Kline & French Labs., and Hahnemann Med. College.*

1514. Antibiotic resistance and the nucleic acid content of bacteria. JOSEPH SMOLENS AND AGNES B. VOGT.* *Children's Hosp. and Univ. of Pennsylvania School of Medicine.*

1534. Chloramphenicol inhibition of protein synthesis. C. L. WISSEMAN, JR., F. E. HAHN,* H. HOPPS* AND J. E. SMADEL. *Army Med. Service Grad. School.*

1512. Physical chemical studies of soluble antigen-antibody complexes. S. J. SINGER* AND DAN H. CAMPBELL. *Yale Univ. and California Inst. of Technology.*

1519. Estimation of circulating antibody-antigen complex. L. A. STERNBERGER,* FRANK MALTANER AND JACOB DEWEERDT.* *New York State Dept. of Health.*

749. Antigen-antibody rates studied by transmittance measurements of light scattering. J. McBROOM JUNGE,* C. O. JUNGE* AND EDWIN G. KREGS. *Univ. of Washington.* (Biochem.)

1531. Enzymologic investigations on the mechanism of softening of tubercles. CHARLES WEISS AND JOSEPH TABACHNICK.* *Albert Einstein Med. Center.*

1487. Mode of inheritance of native resistance to tuberculosis. MAX B. LURIE, PETER ZAPPASODI,* ARTHUR M. DANNENBERG, JR.* AND GEORGE H. WEISS.* *Univ. of Pennsylvania.*

1503. Serologic studies in human histoplasmosis. S. B. SALVIN AND M. L. FURCOLOW.* *Natl. Insts. of Health, Rocky Mountain Lab.*

1466. Native pulmonary resistance of the mouse to pneumococci. CARL G. HARFORD AND ESTHER PARKER.* *Washington Univ.*

1452. Immunity in brucellosis. SANFORD ELBERG AND MENDEL HERZBERG.* *Univ. of California, Berkeley.*

Bacteriophage and Other Viruses

WEDNESDAY, 2:00 P.M.—CONRAD HILTON, LOWER TOWER ROOM

1432. Diphtherial phage-host cell systems. W. L. BARKSDALE* AND A. M. PAPPENHEIMER, JR. *New York Univ. Bellevue Med. Center.*

1481. Antigenic structure of bacteriophage T2. FRANK LANNI AND YVONNE THERY LANNI.* *Univ. of Illinois.*

1529. Composition of phage desoxyribonucleic acid. LAWRENCE L. WEED AND THOMAS A. COURTENAY (intr. by J. E. SMADEL). *Army Med. Service Grad. School.*

1442. Multiplication of Coxsackie virus in adult mice exposed to roentgen radiation. F. S. CHEEVER. *Univ. of Pittsburgh.*

1520. Recovery and characterization of hemagglutinins from two immunologically distinct types of dengue virus. B. H. SWEET,* R. M. CHANOCK* AND A. B. SABIN. *Univ. of Cincinnati College of Medicine.*

1479. Studies on rubella immunization. SAUL KRUGMAN,* ROBERT WARD, KATHRYN GIBLIN JACOBS* AND MARTIN LAZAR.* *New York Univ. Bellevue Med. Center and Willowbrook State School.*

1501. Demonstration of relationships among the St. Louis encephalitis group of viruses by cross-immunity tests in rabbits and guinea pigs. ISAAC RUCHMAN. *Univ. of Cincinnati College of Medicine.*

1513. Immunity to neurotropic viruses, especially those of the Japanese B-West Nile group, among indigenous residents of India. K. C. SMITHBURN. *The Rockefeller Fndn.*

1431. Neutralizing antibodies against Newcastle disease virus in man. F. BANG AND M. FOARD.* *Johns Hopkins Univ. School of Medicine and Hosp.*

1443. Interaction of host and influenza virus on infectivity of group A hemolytic streptococcus. ALVIN F. COBURN, AND JEAN NATHAN.* *Northwestern Univ.*

Symposium: Immunochemical Analysis of Systems Containing Multiple Antigens

WEDNESDAY, 8:00 P.M.—CONRAD HILTON, UPPER TOWER ROOM

Chairman: A. M. Pappenheimer, Jr.

Antigen-antibody reactions in gels. ELMER BECKER. *Army Med. Service Grad. School, Washington, D. C.*

Immunochemical analysis of serum proteins. B. V. JAGER. *Univ. of Utah, College of Medicine, Salt Lake City.*

Immunochemical analysis of egg white. HAROLD F. DEUTSCH. *Univ. of Wisconsin, Madison.*

Antigenic analysis of insect blood (*Platysamia Cecropia*). WILLIAM H. TELFER. *Harvard Univ., Cambridge, Mass.*

Thursday Morning, April 9, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation." For complete institutional connection and address see abstract, Part I.*

Viruses: General

THURSDAY, 9:00 A.M.—CONRAD HILTON, UPPER TOWER ROOM

1496. Adsorption and elution of hemagglutinating viruses on tumor cell suspensions. ALICE E. MOORE AND LEILA C. DIAMOND (intr. by DAVID PRESSMAN). *Sloan-Kettering Inst.*

1499. Inhibition of growth of Ehrlich ascites carcinoma by Newcastle disease virus. ALFRED M. PRINCE* AND HAROLD S. GINSBERG. *Western Reserve Univ. School of Medicine.*

1516. Effect of low protein diet on Rous sarcoma in chickens. DOUGLAS H. SPRUNT AND SARAH SANDS.* *Univ. of Tennessee.*

1460. Developmental forms (precursors) of pox viruses. WILLIAM H. GAYLORD, JR.* AND JOSEPH L. MELNICK. *Yale Univ.*

1524. Effect of ethionine and other materials on Semliki Forest virus infection in mice. R. L. THOMPSON AND A. R. LAVENDER.* *Indiana Univ. Med. Center.*

1509. Alteration of growth curve of meningopneumonitis virus by aureomycin. M. M. SIGEL, A. G. ALLEN* AND A. J. GIRARDI.* *Univ. of Pennsylvania and the Children's Hosp.*

1474. Use of virus growth curves in investigating alterations of viral activity. SEYMOUR S. KALTER. *State Univ. of New York Med. Center at Syracuse.*

1430. Biochemical analysis of the lag-phase in virus development. W. WILBUR ACKERMANN AND H. MAASAAB (intr. by THOMAS FRANCIS, JR.). *Univ. of Michigan School of Public Health.*

1523. Inhibition of influenza virus multiplication by alkyl derivatives of benzimidazole. IGOR TAMM,* KARL FOLKERS,* CLIFFORD H. SHUNK,* DOROTHEA HEYL* AND FRANK L. HORSFALL, JR. *Rockefeller Inst. and Merck & Co.*

1438. Effect of benzimidazole on experimental poliomyelitis in mice and monkeys. GORDON C. BROWN AND DONALD E. CRAIG.* *Univ. of Michigan School of Public Health.*

1527. Effect of a mercurial compound on excretion of poliomyelitis virus in patient's stools. ROBERT WARD, GERALD A. LO GRIPPO,* DAVID P. EARLE, JR.* AND IRVING GRAEF.* *New York Univ. Bellevue Med. Center.*

Antigens

THURSDAY, 9:00 A.M.—CONRAD HILTON, LOWER TOWER ROOM

1448. New human blood factor of rare incidence. ISRAEL DAVIDSOHN, KURT STERN,* EMORY R. STRAUSER* AND WILMA SPURRIER.* *Chicago Med. School, and Mount Sinai Hosp.*

1463. Differences in antigenic specificity of human normal adult, fetal and sickle cell hemoglobins. MORRIS GOODMAN* AND DAN H. CAMPBELL. *California Inst. of Technology.*

1433. Mucoid mutants of *Escherichia coli*. SAM M. BEISER* AND BERNARD D. DAVIS. *USPHS Tuberculosis Research Lab. and Cornell Univ. Med. College.*

1445. Microscopic characteristics of colonies of *Shigella flexneri* II and their relation to virulence and immunogenicity. MERLIN L. COOPER, HELEN M. KELLER* AND EDWARD W. WALTERS.* *Univ. of Cincinnati College of Medicine.*

1456. Cholera endotoxin. ROLF FRETER (intr. by WILLIAM BURROWS). *Univ. of Chicago.*

1515. Isolation and characterization of an antigen of *Pasteurella pestis*. MARTIN L. SPIVACK* AND EDGAR E. BAKER. *Boston Univ. School of Medicine.*

1498. Solubilized antigen preparations from *Bacterium tularense*. RICHARD A. ORMSBEE,* J. FREDERICK BELL* AND CARL L. LARSON. *Rocky Mountain Lab., Natl. Insts. of Health.*

1455. Purification of streptococcal M antigen by cationic exchange. EUGENE N. FOX* AND L. O. KRAMPITZ. *Western Reserve Univ. School of Medicine.*

1485. Qualitative studies of pneumococcal polysaccharides by infrared spectrophotometry. SEYMOUR LEVINE, HEBER J. R. STEVENSON AND PAUL W. KABLER (intr. by LESLIE A. CHAMBERS). *USPHS Environmental Health Center, Cincinnati.*

1471. Alteration of blood group A and O (H) substances by snail enzyme. CALDERON HOWE* AND ELVIN A. KABAT. *Columbia Univ., and Neurological Inst., New York.*

1461. Further differentiation of staphylocoagulase and staphylokinase. EARL B. GERHEIM, RAY PRINS,* JAMES OKUBO,* ROBERT MORRIS,* HORACE FLOYD* AND DONALD NEIL.* *Univ. of Detroit School of Dentistry.*

Thursday Afternoon, April 9, 2:00 p.m.

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For complete institutional connection and address see abstract, Part I.

Poliomyelitis

THURSDAY, 2:00 P.M.—CONRAD HILTON, UPPER TOWER ROOM

1518. Immunologically unclassified human virus (Mack) having some properties of poliomyelitis. ALEX J. STEIGMAN AND U. PENTTI KOKKO.* *Univ. of Louisville.*

1495. Tissue-culture pathogenic agents other than poliomyelitis virus isolated from cases of suspected poliomyelitis. JOSEPH L. MELNICK, JOHN T. RIORDAN,* EDWARD C. CURNEN AND ALASTAIR D. MACRAE.* *Yale Univ.*

1483. Interference between poliomyelitis viruses in tissue culture. NADA LEDINKO (intr. by JOSEPH L. MELNICK). *Yale Univ.*

1504. Propagation *in vitro* of poliomyelitis viruses in cultures of human epithelial cells (strain Hela, Gey) derived from a carcinoma of the cervix. WILLIAM F. SCHERER,* JEROME T. SYVERTON AND GEORGE O. GEY.* *Univ. of Minnesota and Johns Hopkins Univ. School of Medicine.*

1521. Utilization of a morphologically pure strain of human epithelial cells (Hela, Gey) for the diagnosis of poliomyelitis. JEROME T. SYVERTON AND WILLIAM F. SCHERER.* *Univ. of Minnesota.*

1508. Progression of poliomyelitis virus (type 2) in cortisone-treated hamsters following infection by parenteral routes. GREGORY SHWARTZMAN AND STANLEY M. ARONSON.* *Mount Sinai Hosp, New York.*

1437. Viremia and antibody response of abortive poliomyelitis cases. DAVID BODIAN AND RALPH S. PAFFENBARGER, JR.* *Johns Hopkins Univ.*

1502. Immunogenic effect of repeated ingestion of minute amounts of poliomyelitis virus. A. B. SABIN AND J. WINSSER.* *Univ. of Cincinnati College of Medicine.*

1469. Poliomyelitis and other antibody patterns on the island of Tahiti. DOROTHY M. HORSTMANN AND LISBETH M. KRAFT.* *Yale Univ.*

1472. 'Allergic' encephalomyelitis following injection of monkey spinal cord under various experimental conditions. HOWARD A. HOWE. *Johns Hopkins Univ.*

Complement

THURSDAY, 2:00 P.M.—CONRAD HILTON, LOWER TOWER ROOM

1492. Kinetics of hemolysis by antibody and complement. MANFRED M. MAYER, LAWRENCE LEVINE,* ALVIN A. MARUCCI* AND ABRAHAM G. OSLER. *Johns Hopkins Univ. School of Hygiene and Public Health.*

1484. Role of divalent cations in complement fixation and hemolysis. LAWRENCE LEVINE,* KEITH M. COWAN,* ABRAHAM G. OSLER AND MANFRED M. MAYER. *Johns Hopkins Univ. School of Hygiene and Public Health.*

1446. Lysis of sheep erythrocytes by long-chain polymers and complement. KEITH M. COWAN* AND MANFRED M. MAYER. *Johns Hopkins Univ. School of Hygiene and Public Health.*

1511. Effect of cations on complement activity. ARTHUR M. SILVERSTEIN* AND FRANK MALTANER. *New York State Dept. of Health.*

1477. Effects of time and temperature upon fixation of complement by syphilitic serum and cardiolipin antigen. JOHN F. KENT AND EARL H. FIFE.* *Army Med. Service Grad. School.*

1491. Effect of aging on rabbit, human and guinea pig complement. PAUL H. MAURER AND WILLIAM WEIGLE (intr. by FRANK J. DIXON). *Univ. of Pittsburgh School of Medicine.*

Special Session of the Federation

THURSDAY, 7:30 P.M.—CONRAD HILTON, NORTH BALLROOM

Program on page 477

Friday Morning, April 10, 9:00 a.m.

*An asterisk * following an author's name indicates "by invitation."*

For complete institutional connection and address see abstract, Part 1.

Influenza

FRIDAY, 9:00 A.M.—CONRAD HILTON, UPPER TOWER ROOM

1440. Adaptation of influenza virus to mice. WILLIAM A. CASSEL* AND B. A. BRIODY. *Hahnemann Med. College.*

1447. Adaptation of influenza virus to mice. FRED M. DAVENPORT. *Univ. of Michigan School of Public Health.*

1478. Influence of cortisone on adaptation of influenza A virus to the mouse lung. EDWIN D. KILBOURNE AND L. MARGARET DAVES (intr. by M. H. D. SMITH). *Tulane Univ. School of Medicine.*

1462. Development of noninfectious influenza virus in mouse lungs. HAROLD S. GINSBERG. *Western Reserve Univ. School of Medicine.*

1464. Induced reversible virulence of an influenza virus. IRVING GORDON AND ALICE C. GAUVREAU.* *New York State Dept. of Health.*

1465. Air-borne influenza virus A infections in immunized animals: II. The effect of passive immunity on the pathologic process and the antibody response. DOROTHY HAMRE, CLAYTON G. LOOSLI* AND BYRON S. BERLIN.* *Univ. of Chicago.*

1473. Quantitative absorption of antibody from immune serum by influenza virus adsorbed to erythrocytes. KEITH E. JENSEN (intr. by THOMAS FRANCIS, JR.). *Univ. of Michigan School of Public Health.*

1468. Antibody in normal human sera for influenza viruses. M. R. HILLEMAN AND JACQUELINE H. WERNER.* *Army Med. Service Grad. School.*

1467. Patterns of influenza antibody titers in gamma globulin and in pooled human sera. A. V. HENNESSY* AND F. M. DAVENPORT. *Univ. of Michigan School of Public Health.*

1528. Immunohistochemical studies of the growth of influenza and mumps viruses in the chick embryo. BARBARA K. WATSON (intr. by ALBERT H. COONS). *Harvard Med. School.*

1435. Phagocytosis of influenza virus. A. V. BOAND, J. E. KEMPF AND R. J. HANSON (intr. by SAUL MALKIEL). *Univ. of Illinois College of Medicine.*

PAPERS READ BY TITLE

1436. Increased incidence and selective localization of experimental poliomyelitic paralysis after concomitant intravascular virus inoculation and intramuscular injection of cortisone or gelatine. DAVID BODIAN. *Johns Hopkins Univ.*

1454. Paper chromotography of blood group specific substance A. HORACE M. FLOYD,* BERNARD SPRING* AND EARL B. GERHEIM. *Univ. of Detroit School of Dentistry.*

EXHIBITS

The Industrial, Scientific, and Member and Institutional Exhibits will be located in the Exhibition Hall at the Conrad Hilton Hotel. Member and Institutional Exhibits are interspersed throughout the main exhibit area. Inspection periods are as follows: Monday, April 6, 12:00 noon to 8:00 p.m.; Tuesday, Wednesday and Thursday, April 7–9, 8:45 a.m. to 5:30 p.m.

Industrial Scientific Exhibits

Academic Press Inc., New York City (*Booth 107*) cordially invite you to visit and browse among new and recent publications. All the latest *Advances* volumes will be on hand; proofs of forthcoming books may be examined, issues of all the journals may also be inspected. Among the new titles will be *The Proteins*, edited by Bailey and Neurath, *The Vitamins*, edited by Sebrell and Harris, a new series—*Advances in Cancer Research*, edited by Greenstein and Haddow, the second volume of the Harvard Memoirs, *Blood Cells and Plasma Proteins*, edited by Tullis, the 1951–1952 series of the *Harvey Lectures*, and a volume on *Pigment Cell Growth*, edited by Gordon. The **Johnson Reprint Corp.** will display sample reprints which will include the newly released *Annual Review of Biochemistry* as well as the early volumes of *Helvetica Chimica Acta* and the *Journal of Organic Chemistry*. These and other samples of sets, which will be shown, have been reprinted by arrangement with the original publishers.

A. S. Aloe Co., St. Louis, Mo. (*Booths 60 and 61*) will display the De Fonbrune micromanipulator and microforge, with various new attachments for micro-injection and aspiration, preparation of microforge heating elements etc.; new and recent micro-dissection instruments; new Moduline sectional steel laboratory furniture; a new type humidity control incubator; new and recent items of interest to pharmacologists and physiologists; instruments and equipment for experimental animal surgery.

American Hospital Supply Corp., Evanston, Ill. (*Booth 20*) will display the Beckman Spectrophotometer with flame attachment in actual operation for rapid analysis of sodium and potassium. Markham bacteriological diagnostic antigens, Sylvana serological antigens, Dade blood typing serums, and other specialties from their complete line of clinical laboratory supplies will also be exhibited.

American Instrument Co., Inc., Silver Spring, Md. (*Booths 62 and 63*).

American Optical Company, Instrument Division, Buffalo, N. Y. (*Booths 68 and 69*) will demonstrate the new AO rapid scanning spectrophotometer which operates in the visible spectrum and produces spectrophotometric curves instantaneously on the face of a cathode ray tube. A new low cost polarizing microscope, #P45, with built-in light source suitable for magnifications up to 430X will be shown, also the #1200 reflecting objective for ultra violet and infra red microspectrophotometry. Other standard laboratory instruments, including phase and laboratory microscopes and a photomicrographic camera will be displayed. Representatives Mr. W. L. Doemland and Mr. E. V. Finnegan will be present to demonstrate these instruments.

The American Tobacco Co., Richmond, Va. (*Booths 101 and 102*) will display a new moisture meter which records moisture content of tobacco directly by automatically correcting for temperature. This instrument eliminates errors encountered in manually operated devices and is another example of original application of well known principles which result in closer control of quality.

Armour and Company, Chicago, Ill., (*Booth 90*). In keeping with its policy of serving science, industry, and agriculture the Central Research Department, Research Division of Armour and Company, will present a number of specialty items for experimental use and new industrial compounds derived from fats. A research investigator will answer your questions concerning the chemical, physical, and biologic properties of such compounds.

Association of American University Presses, New York City (*Booth 56*), leaders in the field of non-fiction, each year publish a large number of important titles. Many of these gain lasting recognition as reference books and college texts. Many also enjoy wide popularity as trade publications. The exhibiting of books from university presses is an out-growth of the Association of American University Presses. Each press represented is a separate publishing company producing

scientific, technical, and scholarly works as well as general books of vital interest to all Americans. Because of their common goals, and because some of them are too small to sponsor exhibits alone, these presses have combined to present their books in a single impressive display.

Authorized Publishers Binding, Chicago, Ill. (*Booth 87*).

Baird Associates, Inc., Cambridge, Mass. (*Booth 72*) will display an operating model of their flame photometer, designed for convenient sodium and potassium determinations on biological fluids; an infra-red recording spectrophotometer, the premier tool in organic research, the Hardy dermal radiometer, environmental and skin radiation temperature measurement, multilayer interference filters, with bandwidths of 5 millimicrons, and zero transmission less than 0.03 per cent, and one or two other small miscellaneous pieces of apparatus.

Bausch & Lomb Optical Co., Rochester, N. Y. (*Booth 30*) will display scientific instruments and their accessories, including among others, laboratory and research microscopes, photomicrographic cameras, ultra-violet optics, the new B & L grating monochromaters, and monochromatic colorimeters. Featured is the new B & L eyepiece camera. Qualified representatives will be glad to help you with your instrument problems.

The Blakiston Company, Inc., New York City. (*Booth 84*). There are a number of outstanding new books awaiting your examination. Don't miss the brand-new *Biology of Paramacium* by Wichterman—a "must" for researchers in biology and allied fields. Ask to see the new *Comparative Embryology of the Vertebrates* by Nelsen—the best book in its field. Other important books for your consideration are: *Handbook of Basic Microtechnique* by Gray; Lee's *The Microtomist's Vade-Mecum* by Gatenby and Beams; *The Frog* by Rugh; *Early Embryology of the Chick* by Patten; *Biological Antagonism* by Martin, and *Practical Bacteriology, Hematology and Parasitology* by Stitt, Clough and Branham. Members of our educational staff will be on hand to discuss these and other distinguished Blakiston works.

S. Blickman, Inc., Weehawken, N. J. (*Booth 117*) will display stainless steel enclosures for production and research in the biological and pharmaceutical industries. This includes such products as filling cabinets. These enclosures are utilized for providing sterile atmospheres or for working with radioactive materials, viruses and other contaminants.

C. A. Brinkmann & Co., Great Neck, Long Island, N. Y. (*Booth 28*) will display a Mickle tissue disintegrator, Sartorius micro torsion balance, Selecta speed balances, new Sartorius freezing microtome, new Zeiss Opton research microscope, new gamma photomicrographic camera III, and a new photoelectric polarimeter.

Camel Cigarettes, New York City. (*Lounge*)

Clay-Adams Co., Inc., New York City (*Booth 55*) will display materials of interest in physiological research such as plastics and couplers for experimental surgery. They will also show the most recent developments in laboratory apparatus. Another section of the exhibit will be devoted to Medichromes (2 x 2″ 35 mm. Kodachromes), anatomical models, and skeletons and bone preparations.

The Coca-Cola Co., Atlanta, Ga. (*Lounge*). Ice-cold Coca-Cola will be served through the courtesy and cooperation of the New York Coca-Cola Bottling Company and the Coca-Cola Company.

Corning Glass Works, Corning, N. Y. (*Booth 88*) will display a complete line of Pyrex brand laboratory glassware for the experimental laboratory, including pipettes, petri dishes, fritted filters, Vycor ware and life-time red graduated ware.

Denoyer-Geppert Co., Chicago, Ill. (*Booth 103*) will display charts for anatomy, physiology, zoology and botany. Also featured will be their American-made models and a representative selection of the world-famous models by Dr. Auzoux of Paris. There will be demonstrations, and skeletal preparations of unusual quality. Please stop in and ask for a new Catalog 53B for the biological sciences.

E-C Apparatus Co., New York City. (*Booth 25*) will demonstrate electroconvection, a technique for fractionating colloid mixtures into electrophoretically homogenous fractions. Separating two different antibodies from a polyvalent antiserum and producing eight distinct sub-fractions of gamma globulin are examples of its use. The apparatus will handle 0.1–10 grams of material, under sterile conditions, in buffers of normal strength. It can be set up on any laboratory bench.

Edin Co., Inc., Worcester, Mass. (*Booth 38*) will display the latest developments in electrocardiographs and electroencephalographs. To record temperature, respiration, venous or arterial pressure or other biological research, Edin features condenser-coupled, direct-coupled and carrier type amplifiers with companion oscillograph

recorders. Practical demonstration of this equipment will be made by engineers at their booth.

Encyclopaedia Britannica, Chicago, Ill. (*Booth 32*) announces the release of the 1953 edition —complete with new population figures based on the latest governmental census. This is the biggest revision of *Encyclopaedia Britannica* in the past quarter century. *Britannica* in several bindings with year book and descriptive research material are available for inspection in our booth.

J. Melvin Freed, Inc., Perkasie, Pa. (*Booth 89*) will display microscope slides made according to Federal specifications of nearly white glass with ground edges; culture slides made to any specifications required, all concavities uniformly ground and highly polished; "Corning" Brand Optical Cover Glass, America's latest development in cover glass. All glass of uniform thickness, free of all bubbles, seeds and striae.

Fisher Scientific Company, Pittsburgh, Pa. (*Booth 31*) will feature the new laboratory glassware washer, the new clinical electro-photometer, their Unitized laboratory furniture, and other equipment of interest to the medical profession.

The Graf-Apsco Co., Chicago, Ill. (*Booth 39*) will display new and rebuilt microscopes; microrepair service on all makes and models; magnifiers and dissecting instruments. The new Zeiss and newly designed Graf-Apsco microscopes are at your disposal. See the new safety features incorporated in these instruments of highest quality at lowest prices.

Grass Instrument Co., Quincy, Mass. (*Booth 54*) will display its instruments designed for electrophysiological research. Among these are the Model III-D electroencephalograph and accessory devices to adapt it for many types of recording, the S-4 Physiological Research Stimulator, the P-4 Preamplifier, and the C-4-C Kymograph Camera. Competent personnel will be present to discuss problems involving the application and use of these instruments in the fields of physiology, pharmacology, peripheral circulation, neurology and surgery.

Grune & Stratton, Inc., New York City (*Booth 67*) would like to draw your particular attention to the following new journals and books: *Circulation Research; Metabolism;* Goldman's *Fundamentals of Clinical Cancer;* Sattler's *Basedow's Disease;* Rubinstein's *Study of the Brain;* Dameshek and Welch's *Hypersplenism and Surgery of the Spleen;* their new Modern Medical Monograph Series (most recent titles: Starr's *Physiologic Therapy for Obstructive Vascular Disease;* Leibowitz's *Infectious Mononucleosis;* Talbott's *Gout and Gouty Arthritis*).

Heinicke Instruments, Hollywood, Fla. (*Booth 110*) will display a Typhoon laboratory glassware washer, counter model, for laboratories employing one or two people for handwashing. Washes, rinses, and distilled-water rinses in automatic sequence almost every type of laboratory glassware from the smallest vial or pipette to ten liter bottles. Also displayed will be the HW-5000 washer, similar to Typhoon, except floor model and double Typhoon capacity. Another washer displayed will be the HCW-2000 cage washer for automatically washing and rinsing experimental animal cages at the rate of 200 per hour.

International Equipment Co., Boston, Mass. (*Booth 96*) will display the latest model clinical, Size 1 and Model PR-1 centrifuges. New accessories increasing the wide versatility of these machines are also being introduced at this meeting. The thin-sectioning microtome for preparing sections as small as $\frac{1}{40}$th micron for study under the electron microscope is also featured.

Interscience Publishers, Inc., New York City, (*Booth 40*). All the new and standard works of Interscience will be on display. Their newest books, *The Yeasts—A Taxonomic Study,* by J. Lodder and N. W. J. Kreger-Van Rij, and the first volume of the new *Interscience Manual Series, Statistical Methods of Chemical Experimentation* by W. L. Gore, *Advances in Enzymology, Volume XIV, Organic Analysis, Volume I,* and *Crime Investigation* by Paul L. Kirk will be featured along with such outstanding works as Haurowitz's *Progress in Biochemistry;* Brachet's *Chemical Embryology;* Kertesz's *The Pectic Substances;* Deuel's *The Lipids: Their Chemistry and Biochemistry;* Uber's *Biophysical Research Methods;* Burger's *Medicinal Chemistry* (in two volumes); Boyd's *Immunology;* Mommaert's *Muscular Contraction;* Glick's *Techniques of Histo- and Cytochemistry; Methods of Vitamin Assay;* Jacobs' *The Chemistry and Technology of Food and Food Products* (in three volumes); and many other outstanding works in the biochemistry, physiology, medicine, food, fats, and oils, and other related fields. The newly revised and comprehensive catalog describing all publications will also be available for free distribution at the booth, as well as related descriptive literature.

W. H. Kessel & Co., Chicago, Ill. (*Booth 26*) will display optical instruments, in particular research microscopes of American Optical Company, Leitz and Zeiss manufacture, phase equipment, photomicrographic apparatus, monochromators, light sources, and other recent developments in

the field of microscopy; shown also will be Selecta direct reading analytical balances.

Kimble Glass Co., Toledo, Ohio (*Booth 113*) will display thermometers, separatory funnels, burettes of various types, culture tubes, flasks, volumetric ware, etc. Emphasis will be on new permanent-filled thermometers and various types of pipettes.

Lea & Febiger, Philadelphia, Pa. (*Booth 29*) extend a cordial invitation to teachers and investigators to drop in and examine their latest publications. Be sure to see the new *Progress in Fundamental Medicine* by McManus, Wintrobe's *Clinical Hematology*, Collins' *Principles and Practice of Anesthesiology* and Starling's *Principles of Human Physiology*. Don't miss Goldberger's *Unipolar Lead Electrocardiography and Vectorcardiography*.

E. Leitz, Inc., New York City (*Booth 27*) will feature the Dialux laboratory microscope with phase contrast accessories and photomicrographic apparatus, as well as the Aristophot. They will also exhibit the Ortholux research microscope with built in illumination, the Panphot photomicrographic attachment Makan which is used with medical microscopes, the Micro-Ibso, used with the Leica camera for taking photographs on 35mm film, either in black and white or in color, a Zironin arc lamp for photomicrography as well as standard biological monocular and binocular microscopes, together with the stereoscopic microscope. They will also exhibit the freezing microtome. Their booth will be attended by Mr. Donald Main and Mr. Alfred A. Novick, their Chicago representatives.

J. B. Lippincott Co., Philadelphia, Pa. (*Booth 52*) will display, for your approval, professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

The Macmillan Co., New York City (*Booth 76*) will display several recent books in medical education together with new editions of well established texts. Be sure to see the new second edition of Bodansky and Bodansky: *Biochemistry of Disease*, which has been thoroughly revised and enlarged by Dr. Oscar Bodansky.

Josiah Macy, Jr. Foundation Publications, New York City (*Booth 104*). You are cordially invited to inspect the latest published transactions of Macy conferences on a wide range of topics of fundamental importance in the field of medicine and health. These publications are reports of informal multiprofessional discussions concerning research progress, new methods and theories. Our representatives, Miss Elizabeth Fuller and Mr. Alfred Patten, will welcome your visit and the opportunity to discuss with you this new type of medical literature.

McGraw-Hill Book Co., Inc., New York City (*Booth 109*) will display a selected list of medical and scientific books. Specially featured are: Sack's *Isotopic Tracers in Biochemistry and Physiology;* Nonidez and Windle's *Textbook of Histology;* Leavell and Clark's *Textbook of Preventive Medicine;* Houssay's *Human Physiology;* Mitchell's *Textbook of Biochemistry;* Mitchell's *Textbook of General Physiology;* Dunn and Drell's *Experiments in Biochemistry*.

Metro Industries, Long Island City, N. Y. (*Booths 48 and 49*). Recent developments in physiological and pharmacological instrumentation, also latest additions to their Metroware line will be exhibited.

Philip Morris & Co., Ltd., Inc., New York City (*Booth 79*).

The C. V. Mosby Co., St. Louis, Mo. (*Booths 105 and 106*) cordially invite you, as you tour the exhibits, to visit their booths where they have on display for leisurely examination a diversified selection of science books. Whatever your needs for reference or teaching, their representatives will be glad to discuss them with you.

The National Drug Company, Philadelphia, Pa. (*Booth 41*). Chelators and Resinous Exchangers.—Charts and graphs will be displayed demonstrating the *in vivo* augmentation of the action of cation exchange resins for sodium removal by the simultaneous administration of chelators of the type of ethylenediamine tetra-acetic acid.

New Brunswick Scientific Company, New Brunswick, N. J., (*Booth 77*). We are happy to be again among the exhibitors at this year's Federation meeting. We have on display various shakers of superior design and workmanship. Among these shakers is our new gyratory shaker, Model S-3, which illustrates a new mechanical approach to the problem of rotary action motion.

Nuclear Instrument & Chemical Corporation, Chicago, Ill. (*Booths 46 and 47*) will show a complete line of scalers and count rate meters, as well as the new Roto-matic sample changer, the Actigraph radio-chromatographic analyzer, Model DS-1 scintillation detector, a continuous cloud chamber, new medical equipment, a hand and foot monitor, and other devices for personnel protec-

tion. Company engineers will be on hand to provide assistance.

Nuclear Research Corp., Philadelphia, Pa. (*Booth 111*) will display carbon tagged compounds and radiation detection equipment for research laboratories. Of special interest are the scintillation counters. These units are operated by merely connecting to the G-M input of a scaler or ratemeter, and have over 100 times the efficiency of a conventional G-M tube for gamma ray detection.

Patwin Instruments, Waterbury, Conn. (*Booth 53*) will display the latest model Barclay flame photometer and the new Patwin electropolarizer for precise polarography. A new feature of the Barclay photometer is its completely gasketed closed burner-atomizer system which allows freedom from all environmental limitations.

The Perkin-Elmer Corp., Norwalk, Conn. (*Booths 85 and 86*) will display the Model 112 infrared spectrometer, the Model 38 Tiselius electrophoresis apparatus, the Model 52-C flame photometer, and the Model 21 infrared spectrophotometer. Also to be shown will be related accessories for these instruments.

Phipps & Bird, Inc., Richmond, Va. (*Booth 21*). In keeping with the progressive attitude of Phipps & Bird, Inc., their exhibit will again offer many new tools for the scientist. Do not fail to see the tissue cryo-desiccator on display in their booth. This instrument provides a simple, rapid, reliable and inexpensive method of preparing frozen dried tissues. Hamp Rexrode and Bob Smith will welcome you.

Precision Scientific Company, Chicago, Ill. (*Booths 115 and 116*). Emphasis will be placed on their new products. Chief of these is the Ionograph, a tool created to fit the needs of a new field. Recent design changes have resulted in a safer and more convenient instrument. Other new products to be exhibited are: the low temperature circulating bath, the Lo-Temptrol, amperometric titration cell, redesigned Thelco vacuum oven.

Radiation Counter Laboratories, Inc., Skokie, Ill. (*Booth 95*). The main feature of this exhibit is a working arrangement of a small isotope laboratory. Counting equipment consists of an RCL scaler interpreting the data and a preflush flow counter detecting Sr-90 beta. The balance of the exhibit consists of a line of Geiger counters for different applications, and micropipets for the manipulating of radioactive solutions.

A glass blowing demonstration by Mr. Sam Gutilla will be the feature of the **Wakefield Industries, Inc.** exhibit. Mr. Gutilla, one of the foremost glassblowers in the country, will give demonstrations on the hour throughout the meeting. There will also be a display of high vacuum special scientific glass apparatus. Ask for a sketch sheet for glassware at the exhibit.

Ralston Purina Co., St. Louis, Mo. (*Booth 80*) will display an electric train and a scene featuring a laboratory and feed store—built to scale. The train will be hauling a car of Laboratory Chows from store to laboratory. There will also be a table for people to register for a Laboratory Manual and bulletins.

Sanborn Co., Cambridge, Mass. (*Booth 112*) will display several of the Sanborn family of inkless recording equipment for biophysical research, from the single-channel recorder and associated DC and strain gage amplifiers to the versatile, multi-channel Poly-Viso. Full data will also be available on such supplementary instruments and attachments as the electromanometer, pulse wave attachment, and several others.

Sandoz Pharmaceuticals, New York City. (*Booth 66*). The Pharmacology Laboratories of Sandoz invite you to visit our scientific exhibit on the pharmacodynamic effects of new substances on the cardiovascular system.

W. B. Saunders Co., Philadelphia, Pa. (*Booth 108*) cordially invite you to visit their booth and inspect text and reference books in the field of chemistry, anatomy, physiology, biochemistry, bacteriology, zoology, nutrition and pharmacology. See the new Duncan's *Diseases of Metabolism;* Albritton's *Standard Values in Blood;* McLester-Darby's *Nutrition and Diet;* Beckman's *Pharmacology;* Gardner's *Neurology;* Ranson-Clark's *Neuro-Anatomy;* Todd, Sanford and Wells' *Clinical Diagnosis;* Frobisher's *Bacteriology.*

Scientific Specialities Corp., Boston, Mass. (*Booth 14*) will display histological freeze-drying apparatus which prepares frozen-dried tissues, proven by prominent histochemists and radiobiologists, high voltage power supply used with photomultiplier tubes for flame photography, scintillation counters, etc., thermocouple gauge which measures vacuums of 1–.001 mm Hg, Model OD-41 optical discriminator which measures characteristics of the human eye.

Sigma Chemical Company, Saint Louis, Mo. (*Booth 57*), manufacturers of research chemicals. Mr. Dan Broida is using this means of personally meeting persons interested in biochemical research and clinical laboratory procedures. Personnel will be available to discuss any problems you might have with their preparations or the preparation of potentially interesting new compounds.

Ivan Sorvall, Inc., New York City (*Booths 50 and 51*) will display their laboratory equipment, including angle centrifuges, the improved refrigerated angle centrifuge, Sterling automatic pipettes, magnetic stirrer and omni-mixer. Exhibited for the first time is the Antweiler microelectrophoresis.

C. H. Stoelting Co., Chicago, Ill. (*Booth 78*) will display direct ink writing polygraphs, kymographs, including tambours, time markers and accessories. Several types of electronic timing devices will be displayed along with instruments of interest to research departments. The booth will be attended by representatives who will be able to discuss other instruments manufactured by their company, but too numerous to display.

The Technicon Company, New York City (*Booths 73, 74, and 75*) will exhibit the following: Technicon Microscope Lamp, a new and radically different microscope lamp, Autotechnicon for automatic processing and straining of histologic sections, Scopicon for the finest in microprojection, Paraffin Knife, a heated paraffin knife, microslide dryer, new improved tissue floatation bath for paraffin sections, standardized histologic reagents, Lab-Aid Slide Filing Cabinets, Automatic Fraction Collector, a time operated collection apparatus with accessories for counting individual drops of fluid as a control, automatic pipette washing. Technicon Micro-Pump will pump quantities of 0.001–0.1 ml per stroke. It is instantly adjustable to within 0.0001 ml, and is reproducible to within 0.014% at any given setting.

Arthur H. Thomas Co., Philadelphia, Pa. (*Booth 19*) will exhibit a new type tissue mincer—glass homogenizer, with Teflon plunger. Also, an inexpensive electronic stimulator will be demonstrated, together with an electric stylus input control using Teledeltos paper. Various other items for use in the field of the biological sciences will be included.

Tracerlab, Inc., Boston, Mass. (*Booths 58 and 59*) will display Cobalt-60 interstitial needles and a complete accessory line, including needle pushers and extractor, needle inserting forceps, and a needle container. In addition, the Strontium-90 Beta-Ray applicator will be shown and a number of new laboratory instruments, survey meters and personnel protection devices.

Waters Conley Co., Rochester, Minn. (*Booths 34 and 35*) will display a simplified ear oximeter along with a simultaneous single and double scale oximeter. A mobile instrument cart incorporating a 12″ lens kymographic recording camera will be demonstrated. Cardiotachometer for determining instantaneous heart rate and a nitrogen meter for determining the percent nitrogen in nitrogen-oxygen gas mixtures will also be shown.

The Williams & Wilkins Co., Baltimore, Md. (*Booth 24*) will feature two new journals, *Applied Microbiology* and *The Journal of Histochemistry and Cyto-chemistry*. In addition, see the advance material on a new book, *Basic Bacteriology*, by Drs. Carl Lamanna and M. Frank Mallette, a text for post-graduates in bacteriology and review material for practicing bacteriologists.

Wyeth Institute of Applied Biochemistry, Philadelphia, Pa. (*Booths 44 and 45*) will portray the chemistry that is pertinent to the pharmacological and therapeutic properties of Benzethacil. Data on the pharmacology and toxicology of Dibenzylethylenediamine and Benzethacil in experimental animals will be in evidence. Through the medium of easily comprehended visuals, the exhibit will accentuate the usefulness of Benzethacil in specific clinical indications, prophylactic as well as therapeutic.

The Year Book Publishers, Inc., Chicago, Ill. (*Booth 42*) will display its books of special interest. Expecially worthy of examination is W. B. Youmans' *Basic Medical Physiology* which already is firmly established as a valuable aid to students. The entire series *Methods in Medical Research* will be available, including the recently published Volume V. Otto Glasser's *Medical Physics* and Carl A. Moyer's popular manual on *Fluid Balance* will be among a number of other authoritative volumes which justify your consideration.

Member and Institutional Exhibits

Survey of physiological science, American Physiological Society, Washington, D. C. The exhibit will consist of charts, diagrams and graphs outlining the activities of the Survey and indicating its progress. Descriptive literature will be available for distribution and a representative of the Survey's central office will be on hand to answer inquiries. The Survey is a 2¼ year project to investigate the status of physiology in the United States, sponsored by the American Physiological Society and having the financial support of the National Science Foundation.

Electrogenic substances *in vitro* and *in vivo*. R. BEUTNER. *Univ. of Arkansas School of Medicine, Little Rock.* Experiments prove that

electric potential differences arise through contact of aqueous and lipoidal tissue constituents, and not inside of membranes as postulated by the pore theory. Many potent drugs and neuro-hormones are electrogenic in contact with lipids, but cerebral lipids readily lose this electrogenic action by decomposition.

Biological Abstracts. *Univ. of Pennsylvania, Philadelphia.* A cooperative, non-profit abstracting and indexing service covering the world's biological literature, including many European, Scandinavian, Slavonic and Asiatic publications not available to scientists of this country. To facilitate the work of individual biologists Biological Abstracts is also published in nine low-priced sectional editions.

Animal Care Panel. N. R. BREWER, B. J. COHEN,* E. BOND* AND R. J. FLYNN, Chicago, Ill. The Panel is an organization of individuals interested in the care of laboratory animals in research and teaching institutions. The display will present the problems and aims of the Panel. Publications will be on exhibit.

Basal temperature patterns of menstrual cycle. MARY E. COLLETT, GRACE E. WERTENBERGER AND VIRGINIA M. FISKE.* *Western Reserve Univ., Univ. of Indiana and Wellesley College.* Graphs of over 200 cycles show that the cyclic pattern is not fixed but varies considerably even in the same person. The oldest and youngest groups show the greatest extremes in pattern and in incidence of anovulatory cycles.

U. S. Air Force Physiological training program. DONALD E. COPELAND. *USAF Med. Service, Washington, D. C.* The exhibit consists of photographs, charts and descriptive material outlining and explaining the requirement for and the development of the physiological training program in the USAF. This is a base (AFB) level program monitored by the Office of the Surgeon General. Special training for instructors is conducted at Gunter Branch USAF School of Aviation Medicine.

Placement of electrodes in brain (mammals and humans). JOSÉ M. R. DELGADO. *Yale Univ. School of Medicine, New Haven, Conn.* Models of the electrodes employed will be displayed. Photographs demonstrating the surgical technique utilized in the implantation of electrodes will be shown. Alterations of emotional behavior evoked by electrical stimulation of rhinencephalic structures will be illustrated by photographs. Electrocorticographic data and photographs dealing with results obtained from human beings will also be presented.

Excerpta Medica. New York City. Through the publication in 1953 of 12 issues each of 15 classified sections, Excerpta Medica will make available to medical and allied professions a total of 60,000 abstracts of the current literature as it is published in more than 2000 American and foreign journals. Every major medical specialty is included in this most comprehensive of abstract services.

Glucagon, the hyperglycemic-glycogenolytic hormone of the pancreas. P. P. FOA, L. SANTAMARIA,* S. BERGER,* H. WEINSTEIN* AND J. A. SMITH. *Chicago Med. School, Chicago, Ill.* The exhibit consists of a number of charts showing that glucagon is a second pancreatic hormone secreted in response to hypoglycemia. Maintenance of a normal blood sugar concentration depends upon the balanced secretion of insulin on the one hand and the anti-insulin hormones like glucagon on the other.

Blood protein-bound iodine: an accurate measure of the circulating thyroid hormone. WILLIAM C. FOSTER. *Hahnemann Med. College, Philadelphia, Pa.* Charts are displayed in an attempt to explain the meaning, significance, formation and a summary of methods for the determination of blood protein-bound iodine. Factors which influence this fraction of iodine, as well as experimental studies, are presented.

A model to demonstrate pressure volume relations in the circulation. O. H. GAUER,* J. P. HENRY AND H. O. SIEKER.* *Aero Med. Lab., Wright Air Development Center, Wright-Patterson AFB, Ohio.* The model is made of interconnected specially shaped glass bottles; their contour is such that the relation of height to volume of fluid in each follows the pressure-volume relationship of a corresponding segment of the cardiovascular system. Circulatory changes induced by posture, pressure breathing, hemorrhage or infusion may be simulated.

Thermistor radiometer. JAMES D. HARDY AND ALICE M. STOLL.* *Cornell Univ. Med. College, New York City.* A portable, direct-reading radiometer of high sensitivity and rapid response, particularly suited to measurement of skin and radiant surface temperatures of small areas (¼ cm in diameter, 1.54 cm^2). May be used over a wide range of ambient temperatures both in and out of doors.

Physiological devices for expediting work output. F. A. HELLEBRANDT, SARA JANE HOUTZ* AND DONALD E. HOCKMAN.* *Univ. of Illinois, Chicago.* Demonstration of ergographs and techniques used to study reflex facilitation of voluntary exercise in man. The latter include the

dynamogenic effects of bilateral and alternate exercise, the influence of static exercise on dynamic work output, overload, cross-education, and their clinical application in rehabilitation of the disabled.

A simple one-stage technique for hepatectomy in the dog. J. MARKOWITZ, J. ARCHIBALD* AND H. G. DOWNIE.* *Univ. of Toronto and Ontario Veterinary College, Guelph, Ontario, Canada.* A colored motion picture assisted by diagrams. The vena cava is reconstituted by a siliconed cannula; an Eck fistula is done below this.

Continuous enteral alimentation. Med. Research Fndn. of Dade County, Miami, Florida. A feeding solution has been prepared which, when administered continually by nasal tube, has proven of great assistance in various types of feeding problems. The formula of the solution will be presented, together with cases illustrating its use as a therapeutic agent and a tool in research in nutrition.

National Society for Medical Research, Chicago, Ill., will feature the Walter Reed Society. Information and literature setting forth the aims and activities of the Society will be available.

The effluogram: serial rapid-fire sampling of radioactivity in blood and perfusates. J. M. O'BRIEN* AND W. S. WILDE. *Tulane Univ., New Orleans, La. and Oak Ridge Natl. Lab., Oak Ridge, Tenn.* The unknown radioactivity flows onto a filter paper belt rotating at constant speed. This is cut into timed segments for counting. Sample size, limited only by the chosen count intensity, is as small as 0.001 ml collected during 0.02 sec (see abstract 339).

Determination of transpulmonary oxygen dissociation curve. JOHN F. PERKINS, JR., WILLIAM E. ADAMS,* ADOLFO FLORES,* WILLIAM M. LEES* AND WILLARD W. WEBBER.* *Univ. of Chicago and Municipal Tuberculosis Sanitarium, Chicago, Ill.* Demonstration of apparatus for determination of the oxygen dissociation curve on patients and for simultaneous determination of other tests of pulmonary function. Equipment includes Wood recording oximeter assembled by student technicians, Rahn alveolar sampling valve, Pauling oxygen analyzers, bicycle ergometer and Tissot spirometer with kymograph.

Microbiology of cancer. LAWRENCE W. SMITH. *Presbyterian Hosp., Newark, N. J.* The exhibit illustrates cultural and morphologic characteristics of certain acid-fast pleomorphic organisms recovered regularly from cancer patients' blood; pathologic changes (including neoplasia at times) induced by serial transfer of the organism to animals, effect of vaccines, immune sera, antibiotics and other chemotherapeutic agents in both animals and man, and induction of heterologous (human) transplants in animals.

Sympathetic outflows. W. C. RANDALL, J. W. COX,* W. F. ALEXANDER,* A. B. HERTZMAN AND K. E. COLDWATER.* *St. Louis Univ., St. Louis, Mo., and Jefferson Barracks VA Hosp.* The procedure of sympathetic denervation in man and dog was studied *a*) by charting outflows through stimulation experiments carried out at the time of operation, and *b*) through subsequent postoperative examination of sudomotor and vasomotor responses. The variability in outflows will be illustrated as a problem in denervation.

U. S. Army Medical Nutrition Laboratory. *Chicago, Ill.* The mission and research activities will be presented by charts and tabular data. Certain phases of current research will be amplified by demonstrations by members of the research staff.

Bacterial bioautography with tetrazolium dye. E. USDIN,* G. SHOCKMAN* AND G. TOENNIES. *Inst. for Cancer Research and Lankenau Hosp., Philadelphia, Pa.* The exhibit will show specimens and color transparencies of bacterial growth on agar. Utilization of tetrazolium salts, high level inocula and various other improvements increase sensitivity up to 1000-fold, decrease necessary incubation time and simplify routine photographic recording of results.

Automatic research instrumentation. D. B. ZILVERSMIT AND C. H. EADES.* *Univ. of Tennessee, Memphis.* The exhibit consists of *a*) automatic sample changer for counting radioactive materials, *b*) automatic titrating and recording apparatus for microbiological assays.

Publications of the Federated Societies. Journals and books published by the member Societies of the Federation and by Annual Reviews, Inc., will be on display. Included among the journals are *The American Journal of Physiology, Journal of Applied Physiology, The Journal of Biological Chemistry, The Journal of Immunology, The Journal of Nutrition, The Journal of Pharmacology and Experimental Therapeutics, Pharmacological Reviews* and *Physiological Reviews.* The books are *Annual Review of Biochemistry, Annual Review of Physiology,* and other publications of Annual Reviews, Inc. An attendant will be present to give information and to receive subscription orders.

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FEDERATION NOTICE

Membership in the Federation of American Societies for Experimental Biology

There is no provision in the Federation Constitution for individual membership. An individual wishing to associate himself with the Federation must become a member of one or more of the six constituent Societies; such membership entitles him to present papers at the annual meetings of the Federation and to receive the quarterly publication, FEDERATION PROCEEDINGS. Since requirements and procedures for election to membership vary among the six Societies, the following information is provided:

1. *American Physiological Society.* Any resident of North America who has conducted and published meritorious original researches in physiology shall be eligible for membership. Names of candidates must be proposed in writing by at least two members of the Society, and from these names the Council shall nominate candidates for election to membership at a regular meeting of the Society. *For further information and proposal forms, address* DR. M. O. LEE, Executive Secretary, 2101 Constitution Ave., Washington 25, D. C.

2. *American Society of Biological Chemists.* Qualified investigators who have conducted and published meritorious original investigations in biological chemistry are eligible for membership. Nominations shall be made and seconded by members of the Society and shall be submitted to the Council, who shall determine eligibility and make recommendations to the Society at any regular meeting. *Nomination blanks and further information may be obtained from* DR. E. H. STOTZ, Secretary, University of Rochester School of Medicine and Dentistry, Rochester 20, N. Y.

3. *American Society for Pharmacology and Experimental Therapeutics.* Any person who has conducted and published meritorious investigations in pharmacology or experimental therapeutics and who is an active investigator in one of those fields, shall be eligible to membership. Candidates shall be proposed by two members who are not members of the Society Council, for consideration and recommendation by the Membership Committee and the Council. *Further information and application forms may be obtained from* DR. C. C. PFEIFFER, Secretary, University of Illinois College of Medicine, 1853 West Polk St., Chicago 12, Ill.

4. *American Society for Experimental Pathology.* Any American investigator who has contributed meritorious work in pathology within three years prior to his candidacy is eligible for membership. Candidates shall be nominated by two members and the nominations approved by the Council for election by Society members at a regular meeting. *Additional information and nomination forms may be obtained from* DR. R. L. HOLMAN, Secretary, Louisiana State University School of Medicine, New Orleans, La.

5. *American Institute of Nutrition.* Qualified investigators who have independently conducted and published meritorious original investigations in some phase of the chemistry or physiology of nutrition, and who have shown a professional interest for at least five years, are eligible for membership. Nominations shall be made and seconded by members of the Society and shall be submitted to the Council for recommendation to the Society at any regular meeting. *For nomination blanks and additional information address* Dr. J. M. ORTEN, Secretary, Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.

6. *American Association of Immunologists.* Any qualified person engaged in the study of problems related to the purpose of the Association may apply for membership. Candidates must be nominated by two members of the Association and applications must be accompanied by letters of recommendation, curriculum vitae and a list of reprints of publications. The Council shall determine eligibility and submit the names of eligible candidates to the membership at the annual meeting. *For further information and application blanks, address* DR. J. Y. SUGG, Cornell University Medical College, 1300 York Ave., New York 21, N. Y.